VESUVIUS PLC

29 July 2021

Half Year Results for the six months ended 30 June 2021

Strong commercial performance, supported by recovering end markets and market share gains

Vesuvius plc, a global leader in molten metal flow engineering and technology, announces its unaudited results for the six months ended 30 June 2021.

Financial summary	H1 2021 (£m)	H1 2020 (£m)	Year-on-year change	Underlying change[1]
Revenue	808.1	720.0	12%	18%
Trading Profit[2]	73.3	51.1	43%	54%
Return on Sales[2]	9.1%	7.1%	200 bps	220 bps
Operating Profit	68.5	39.8	72%	
Headline Profit Before Tax[2]	70.3	45.9	53%	
Profit Before Tax	65.5	34.6	89%	
Profit	46.3	24.9	86%	
Headline Earnings[2]	48.5	31.3	55%	
Headline EPS[2] (pence)	17.9	11.6	54%	
Statutory EPS (pence)	15.9	8.4	89%	
Adjusted operating cash flow[2]	37.9	70.2	-46%	
Cash generated from operations	50.2	79.2	-37%	
Net Debt[2]	196.6	229.7	-14%	
Dividend (pence)	6.2p	3.1p	+100%	

(1) Underlying basis is at constant currency and excludes separately reported items and the impact of acquisitions and disposals.
(2) For definitions of non-GAAP measures, refer to Note 16 in the Condensed Group Financial Statements.

Half Year 2021 Highlights

- Revenue of £808.1m, an increase of 18% on an underlying basis, reflecting the ongoing recovery in both our Steel and Foundry Divisions across most geographies and all end markets
- Strong underlying sales growth in both Steel Flow Control (+21%) and Foundry (+22%), supported by the end market rebound and market share gains, with more moderate growth in Advanced Refractories (+9%) where priority was given to price increases over volumes
- Trading profit of £73.3m, an increase of 54% on an underlying basis, with return-on-sales up 220bps to 9.1%
- H1 2021 trading profit impacted by £10.3m in excess freight costs due to global supply chain disruption
- Selling price increases compensated raw material costs but did not fully mitigate H1 excess freight costs
- Focus on market share growth and medium-term market opportunities from:
    - £28m capacity expansion in Steel Flow Control in Asia and EMEA, to be operational from late 2022
    - 12 new products launched, underlining the benefits of maintaining our industry-leading R&D investment during 2020
- Continued strong working capital performance with trade working capital/sales having improved to 20.7% at June 2021 (12m average), versus 23.2% at December 2020 and 24.6% at June 2020
- Improvement in our Net debt/EBITDA to 1.1x at June 2021, versus 1.2x at December 2020, and refinancing of our revolving credit facility ("RCF") in early July which was increased in size from £300m to £385m
- Interim dividend of 6.2p (2020: 3.1p), an increase of 100% versus 2020

Comment from Patrick André, CEO:

"Vesuvius delivered a strong commercial performance in H1 2021, supported by the continued improvement in end markets and market share gains in Steel Flow Control and Foundry. While we continue to experience inflationary pressure in certain raw materials and freight, this will be offset in H2 through incremental selling price increases currently being implemented. Consequently, trading profit in the second half is expected to be similar to the first half. Overall, our expectation for the full year is unchanged.

Looking beyond the ongoing transition period of the pandemic recovery, we expect continuing structural growth in our end markets of steel and foundry to present attractive organic growth opportunities, supported by the strategic expansion of our Steel Flow Control production capacities in Asia and EMEA.

We remain confident that we will deliver further meaningful improvement in our financial performance in the coming years, based on our optimised manufacturing footprint, our ongoing R&D investment and new product pipeline, as well as our entrepreneurial and decentralised business model."

Presentation of H1 2021 Results

Vesuvius management will make a presentation to analysts and investors on 29 July, 2021 at 10.00 UK time at the London Stock Exchange, 10 Paternoster Square, London EC4M 7LS. For those unable to attend, the event will be livestreamed and can be accessed by clicking here. Participants can also join via an audio conference call. Please click here to register. Once registered, you will be provided with the information needed to join the conference, including dial-in numbers and passcodes. Be sure to save this information in your calendar.

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About Vesuvius plc

Vesuvius is a global leader in molten metal flow engineering and technology principally serving the steel and foundry industries.

We develop innovative and customised solutions, often used in extremely demanding industrial environments, which enable our customers to improve their manufacturing processes, enhance product quality and reduce costs. These include flow control solutions, advanced refractories and other consumable products and increasingly, related technical services including data capture.

We have a worldwide presence. We serve our customers through a network of low-cost manufacturing plants located close to their own facilities, and embed our industry experts within their operations, who are all supported by our global technology centres.

Our core competitive strengths are our market and technology leadership, strong customer relationships, well established presence in developing markets and our global reach, all of which facilitate the expansion of our addressable markets.

Our ultimate goal is to create value for our customers, and to deliver sustainable, profitable growth for our shareholders giving a superior return on their investment whilst providing each of our employees with a safe workplace where he or she is recognised, developed and properly rewarded.

Forward looking statements

This announcement contains certain forward looking statements which may include reference to one or more of the following: the Group's financial condition, results of operations, cash flows, dividends, financing plans, business strategies, operating efficiencies or synergies, budgets, capital and other expenditures, competitive positions, growth opportunities for existing products, plans and objectives of management and other matters.

Statements in this announcement that are not historical facts are hereby identified as "forward looking statements". Such forward looking statements, including, without limitation, those relating to the future business prospects, revenue, working capital, liquidity, capital needs, interest costs and income, in each case relating to Vesuvius, wherever they occur in this announcement, are necessarily based on assumptions reflecting the views of Vesuvius and involve a number of known and unknown risks, uncertainties and other factors that could cause actual results, performance or achievements to differ materially from those expressed or implied by the forward looking statements. Such forward looking statements should, therefore, be considered in light of various important factors that could cause actual results to differ materially from estimates or projections contained in the forward looking statements. These include without limitation: economic and business cycles; the terms and conditions of Vesuvius' financing arrangements; foreign currency rate fluctuations; competition in Vesuvius' principal markets; acquisitions or disposals of businesses or assets; and trends in Vesuvius' principal industries.

The foregoing list of important factors is not exhaustive. When considering forward looking statements, careful consideration should be given to the foregoing factors and other uncertainties and events, as well as factors described in documents the Company files with the UK regulator from time to time including its annual reports and accounts.

You should not place undue reliance on such forward looking statements which speak only as of the date on which they are made. Except as required by the Rules of the UK Listing Authority and the London Stock Exchange and applicable law, Vesuvius undertakes no obligation to update publicly or revise any forward looking statements, whether as a result of new information, future events or otherwise. In light of these risks, uncertainties and assumptions, the forward looking events discussed in this announcement might not occur.

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Vesuvius plc

Half Year Results for the six months ended 30 June 2021

Vesuvius delivered a strong commercial performance in H1 2021, supported by the continued improvement in end markets and market share gains in Steel Flow Control and Foundry.

According to the World Steel Association (WSA), crude steel production in the world excluding China and Iran increased by 18.3% in H1 2021, which is 0.3% ahead of H1 2019. Foundry end-markets across all regions also posted significant growth, with production in the global light vehicle, medium & heavy commercial vehicle and mining & construction end markets up 29.7%, 20.3% and 16.4%, respectively, according to IHS and Oxford Economics data. Compared to H1 2019, global light vehicle production is down 12.3%, whilst medium & heavy commercial vehicles is up 2.1% and mining & construction is up 6.1%. The lagging recovery versus 2019 levels in the light vehicles market reflects the global shortage of semi-conductors, which has constrained the ability of OEMs to ramp-up production.

£m	**H1 2021 Reported**	**Acquisitions / Disposals**	**H1 2021 Underlying**	H1 2020 Reported	Currency	Acquisitions / Disposals	H1 2020 Underlying	**Reported % Change**	**Underlying % Change**
Revenue	808.1	-	808.1	720.0	-36.2	-	683.8	12%	18%
Trading Profit	73.3	-	73.3	51.1	-3.6	-	47.5	43%	54%
Return on Sales	9.1%		9.1%	7.1%			6.9%	+200 bps	+220 bps

Group trading performance

In the first half of 2021, the Group generated revenues of £808.1m, an increase of 12% compared to H1 2020, on a reported basis. Underlying Group revenue, adjusted for the effects of currency translation, increased by 18%. Trading profit (adjusted EBITA) was £73.3m, an increase of 43% on a reported basis and 54% on an underlying basis. The Group achieved return on sales of 9.1% in H1 2021, an increase of 200bps (220bps on an underlying basis). This strong performance was achieved despite the unwinding of the majority of temporary Covid-related cost savings and the impact of excess freight costs.

On an underlying basis, adjusted for the effects of currency translation, Group revenues remain 3.3% below the level achieved in H1 2019. This is due to the exposure of our Steel Division to NAFTA and the EU 27 + UK where production remains below H1 2019 levels and the exposure of the Foundry Division to light vehicles which is lagging broader market growth due to the semi-conductor shortage.

Strategic progress

Vesuvius' core strategic objective is to deliver long-term sustainable and profitable growth. We have a clear strategy to achieve this objective centred around four key execution priorities. We continued to make progress on these priorities in the first half of 2021, and believe we are well-positioned to benefit from the strengthening recovery trends in our end markets. It remains our stated ambition to achieve a 12.5% trading profit margin once volumes have recovered to pre-pandemic levels.

- **Reinforce our technology leadership**
    - Maintained our industry-leading level of R&D investment, with H1 2021 R&D spend of £14.8m, up from £13.6m in H1 2020
- **Develop our technical offering and increase the penetration of our value-creating solutions**
    - Launched 12 new products in H1 2021, more than we launched in the whole of 2020. On track to hit our target of 22 new product launches in 2021
        - Flow Control: Vesuvius Air-Shield improves steel quality and reduces frequency of tube changes
        - Advanced Refractories: Energy efficient Basilite spray increases tundish availability
        - Foundry: SEMCO FF formaldehyde-free coating with improved environmental performance for our customers
- **Capture growth in developing markets**
    - Strong Steel Flow Control growth, outperforming the market in fast-growing regions such as India, Latin America, Russia, Turkey and Vietnam
    - In China, our Foundry Division grew 27%, whilst Steel Flow Control increased 16%
- **Improve our cost leadership and margins**

    - Return on sales increased to 9.1%, up 220bps (underlying) versus H1 2020
    - Full period impact of restructuring actions taken during 2020 delivered a £2.5m benefit

Further progress on our ESG agenda H1 2021

Following the launch of our Group Sustainability Initiative at our 2020 full year results, we continue to make progress on a number of fronts. Selected highlights from H1 2021 include:

- **Progressive switch to renewable electricity:** Four manufacturing sites have converted to renewable electricity in H1 2021. These sites represent c.19% of our total Scope 2 emissions, and c.5% of our Scope 1 and Scope 2 emissions
- **Systematic use of internal carbon pricing to assess decisions:** We have integrated carbon pricing (€30/t CO_2 in 2021) into our capex analysis which supports the selection of more environmentally friendly production processes when investing in capacity increases
- **Reinforced R&D effort to develop products which improve the sustainability of our customers:** Increased R&D focus on products that help our customers improve their environmental footprint
- **Improved ESG rating:** MSCI ESG rating upgraded to 'A' from 'BBB' in June 2021

Foreign exchange

The net impact of average H1 2021 exchange rates compared to H1 2020 averages has been an H1 2021 headwind of approximately £3.6m at trading profit level. The implied impact of average H1 2021 exchange rates, when compared to average 2020 exchange rates, would be a headwind of 6% on our 2021 full year trading profit.

Excess freight costs

The Group's trading profit in H1 2021 has been negatively impacted by £10.3m in excess freight costs due to disruption in global supply chains and the impact this has had on the logistics market. We expect this headwind to continue throughout 2021.

Benefit from restructuring programmes completed in 2020

In H1 2021, we benefitted from £2.5m of restructuring savings related to a full period impact of actions taken during 2020. We expect a benefit for the full year 2021 of £4.3m, in-line with previous guidance.

Expansion of Steel Flow Control capacity supports organic growth

The Group will undertake a £28m capacity expansion, to be operational from late 2022, in some of our most profitable product lines, to support future organic growth and market share gains:

- Significant investment at our Skawina Poland plant to serve EMEA, and in particular fast-growing markets in EEMEA
    - +35% expansion in EMEA Viso capacity
    - +100% expansion in EMEA Slide gate capacity
- +50% expansion in Viso capacity in Kolkata, India to serve the fast growing markets of both India and South East Asia

Working capital

Our continued strong focus on working capital has resulted in our average trade working capital / sales for the prior 12 months improving further to 20.7% at June 2021, compared to 23.2% at December 2020 and 24.6% at June 2020.

This improvement is driven by: a decrease between December 2020 and June 2021 in our debtor days from 77.1 to 73.4 (12m average); a decrease in our inventory days from 76.0 to 70.7 (12m average); and an increase in our creditor days from 60.6 to 62.7 (12m average). We expect that our inventory days will increase over the remainder of 2021 due to our decision to build-up raw material and finished goods inventories in anticipation of a further recovery in end markets.

Tax

Our Effective Tax Rate ("ETR") is currently 26.5% (H1 2020: 27.2%). This resulted in an H1 2021 headline tax charge of £18.5m (H1 2020: £12.3m; Full year 2020: £24.4m).

Revolving credit facility ("RCF")

We successfully refinanced our RCF on 5 July 2021. This has increased in size from £300m to £385m with a maturity date of 5 July 2025 and an option to extend this by 1 year. An accordion feature allows for an additional £100m of future borrowing, subject to our lending banks obtaining credit approvals at that time.

Financial position and liquidity

Net Debt at 30 June 2021 stood at £196.6m, up from £175.1m at the end of 2020. Our adjusted operating cash flow was £37.9m, offset by the payment of the 2020 Final dividend of £38.7m in May 2021, £3.4m of net finance cost, and £13.7m of income taxes paid. Our Net Debt / LTM EBITDA ratio was 1.1x at 30 June 2021 versus 1.2x at the end of 2020. This provides us with significant headroom against our debt covenant limit of 3.25x net debt/LTM EBITDA.

Our available committed liquidity would have been £488.5m at 30 June 2021, when adjusted to reflect the increase in size of our new RCF, compared to £437.3m at 31 December 2020.

Quality, health and safety

The Board and the entire leadership team of Vesuvius place great emphasis on the importance of quality, health and safety in the workplace and in the communities in which we operate. Reliability in quality and delivery is vital to our customers as they use Vesuvius' products in critical areas of their own processes. The level of risk attached to a catastrophic failure is often such that, for people and equipment, no compromise can be accepted. Our Lost Time Injury Frequency Rate was disappointing at 1.2 per million hours worked in H1 2021 versus 1.1 in H1 2020 and 1.4 in H1 2019.

Interim Dividend

The Board has declared an interim dividend of 6.2 pence per share (2020: 3.1p per share), which represents an increase of 100% compared to our 2020 interim dividend. The interim dividend will be paid on 17 September 2021 to shareholders on the register at the close of business on 6 August 2021. Any shareholder wishing to participate in the Vesuvius Dividend Reinvestment Plan needs to have submitted their election to do so by 26 August 2021.

Outlook

Vesuvius delivered a strong commercial performance in H1 2021, supported by the continued improvement in end markets and market share gains in Steel Flow Control and Foundry. While we continue to experience inflationary pressure in certain raw materials and freight, this will be offset in H2 through incremental selling price increases currently being implemented. Consequently, trading profit in the second half is expected to be similar to the first half. Overall, our expectation for the full year is unchanged.

Looking beyond the ongoing transition period of the pandemic recovery, we expect continuing structural growth in our end markets of steel and foundry to present attractive organic growth opportunities, supported by the strategic expansion of our Steel Flow Control production capacities in Asia and EMEA.

We remain confident that we will deliver further meaningful improvement in our financial performance in the coming years, based on our optimised manufacturing footprint, our ongoing R&D investment and new product pipeline, as well as our entrepreneurial and decentralised business model.

Operational Review

Vesuvius comprises two Divisions, Steel and Foundry. The Steel Division operates as three business lines, Steel Flow Control, Advanced Refractories and Steel Sensors & Probes (formerly Digital Services).

Steel Division

Steel production in the world excluding China and Iran, which accounts for approximately 90% of Vesuvius' sales, increased by 18.3% year-on-year with all geographies recording positive volume growth. Production growth was especially strong in India (+31.3%) and South America (+28.2%).

The table below sets out the growth in steel production in H1 2021 compared to H1 2020 and to H1 2019. The growth rates show that despite the strong recovery in H1 2021, steel production volumes remain below the H1 2019 levels in certain key regions, including NAFTA and the EU 27 + UK.

Crude steel production year-on-year change	H1 '21/'20	H1 '21/'19
China	11.8%	14.0%
India	31.3%	1.8%
NAFTA	16.3%	-3.7%
South America	28.2%	3.7%
EMEA ex Iran	15.2%	1.1%
EEMEA ex Iran	12.8%	5.0%
EU 27 + UK	18.0%	-2.9%
World	14.4%	7.8%
World ex China & Iran	18.3%	0.3%

Source: World Steel Association (Month-to-date totals may include revised data not available on a monthly basis)

Vesuvius' Steel Division reported revenues of £570.3m in H1 2021, an increase of 10.5% compared to H1 2020. On an underlying basis, Steel Division revenue was up 16.5%, with particularly strong performance in the growing markets of India, South America and Vietnam, where we grew 48%, 57% and 70%, respectively.

There was a strong performance in Steel Flow Control, with underlying sales growth of 21%, outperforming steel production growth of 18.3% in the world excluding China and Iran. In Advanced Refractories, lower growth reflected our continued prioritisation of profitability over volumes. The Steel Division revenues incorporate a moderate positive price impact in H1 2021, as price increases compensated raw material costs but did not fully mitigate H1 excess freight costs.

Steel Division trading profit improved 27% to £49.4m, with return on sales expanding 110bps to 8.7%.

Steel Division	H1 2021 (£m)	H1 2020 (£m)	Change (%)	Underlying change (%)
Steel Flow Control Revenue	315.5	274.4	15%	21%
Steel Advanced Refractories Revenue	238.6	228.8	4%	9%
Steel Sensors and Probes Revenue	16.2	13.1	24%	35%
Total Steel Revenue	570.3	516.3	10.5%	16.5%
Total Steel Trading Profit	49.4	38.9	27%	35%
Total Steel Return on Sales	8.7%	7.5%	110 bps	120 bps

Steel Flow Control

The Flow Control business unit supplies the global steel industry with consumable ceramic products, systems, robotics, digital services and technical services. These products are used to contain, control and monitor the flow of molten steel in the continuous casting process. The consumable ceramic products that Vesuvius supplies have *a short service life (often a matter of a few hours) due to the significant wear caused by the extremely demanding environment in which they are used. These products must withstand extreme temperature changes, whilst resisting liquid steel and slag corrosion. In addition, the ceramic parts in contact with the liquid steel must not in any way contaminate it. The quality, reliability and consistency of these products and the associated digital services we provide are therefore critical to the quality of the finished metal being produced and the productivity, profitability and safety of our customers' processes.*

Steel Flow Control Revenue	H1 2021 (£m)	H1 2020 (£m)	Change (%)	Underlying change (%)
Americas	101.9	92.2	11%	24%
Europe, Middle East & Africa (EMEA)	124.1	101.5	22%	25%
Asia-Pacific	89.4	80.7	11%	14%
Total Steel Flow Control Revenue	315.5	274.4	15%	21%

In the first half of 2021, underlying revenues in the Group's Steel Flow Control business increased by 21% year-on-year to £315.5m, driven by strong recovery in most regions.

In EMEA excluding Iran, revenues grew 25% compared to H1 2020 on an underlying basis, versus steel production growth of 15%. This outperformance was broad-based, with revenue growth exceeding 20% in both the EU 27+UK and EEMEA (EMEA excluding EU 27+UK).

In the Americas, underlying revenues grew 24%, outperforming steel production growth of 19%. This outperformance was driven by 54% growth in South America.

In Asia Pacific, revenues grew 14% on an underlying basis, with China up 16% versus steel production growth of 12%. In the rest of the Asia Pacific region, the outperformance in Vietnam (+76.4% versus steel production growth of 68%) was partially offset by a decline in South Korea.

Steel Advanced Refractories

The Steel Advanced Refractories business unit supplies complete value-added solutions to its customers including specialist refractory materials, advanced installation technologies (including robots), computational fluid dynamics capabilities and lasers. The specialist refractory materials are subject to extreme temperatures, corrosion and abrasion, they are in the form of powder mixes, which are spray-applied or cast onto the vessel to be lined ('monolithics') and refractory shapes (e.g. bricks, pads, dams and other larger precast shapes). The service life of the products that Advanced Refractories supplies into the steel making process can vary (some a matter of hours and others for a period of years) based upon the type of refractory and the level of wear caused by the demanding environment in which they are used. An integral part of our success depends upon our best-in-class installation technologies (including robots) and lasers to track the performance of installed Vesuvius refractories as well as the strong level of collaboration with our customers.

Steel Advanced Refractories Revenue	H1 2021 (£m)	H1 2020 (£m)	Change (%)	Underlying change (%)
Americas	80.3	77.3	4%	13%
Europe, Middle East & Africa (EMEA)	90.3	97.2	-7%	-5%
Asia-Pacific	68.0	54.3	25%	31%
Total Steel Advanced Refractories Revenue	238.6	228.8	4%	10%

Steel Advanced Refractories reported revenues of £238.6m in H1 2021, an increase of 10% on an underlying basis.

On an underlying basis, revenues grew 13% in the Americas, with strong outperformance in South America, which grew 70% versus steel production growth of 28%.

In EMEA excluding Iran, revenues posted an underlying decline of 5% during the period as we continued to exit unprofitable contracts and also led price increases in product lines that were impacted by higher raw material costs.

In Asia Pacific, revenues grew 31% on an underlying basis driven by strong outperformance in India (+57%), Vietnam (+67%) and Japan (+48%).

Steel Sensors & Probes (formerly Digital Services)

The Steel Sensors & Probes business unit offers products to our customers to enable them to make their underlying processes more efficient and reliable. The business unit focuses on providing a range of sensors and probes that enhance the control and monitoring of our customers' production processes, complementing Vesuvius' strong presence and expertise in molten metal engineering to create new technologies and integrate them into expert process management systems. These products include temperature sensors, oxygen, hydrogen and sublance probes, iron oxide and metal sampling for the steel, aluminium and foundry industries. By using these technologies, customers can focus on critical parameters within their processes, enabling them to refine their production methods to improve quality, lower production costs and maximise efficiency.

Steel Sensors & Probes Revenue	H1 2021 (£m)	H1 2020 (£m)	Change (%)	Underlying change (%)
Americas	10.5	8.1	30%	50%
Europe, Middle East & Africa (EMEA)	5.7	4.9	15%	16%
Asia-Pacific	0.1	0.1	-24%	-24%
Total Steel Sensors & Probes Revenue	16.2	13.1	24%	35%

Revenues in Steel Sensors & Probes were £16.2m in H1 2021, representing an underlying increase of 35% year-on-year. The strong performance in the Americas was driven by new customer wins, especially in South America. In EMEA, we also performed well and continued to gain traction.

Foundry Division

The Foundry Division is a world leader in the supply of consumable products, technical advice and application support to improve the performance and quality of ferrous and non-ferrous castings. Vesuvius operates under the brand FOSECO in the foundry market. The foundry process is highly sequential and is critically dependent on consistency of product quality and productivity optimisation. Working alongside customers at their sites, our engineers provide on-site technical expertise in addition to advanced computational fluid dynamics capabilities to develop the best customised solutions. The conditioning of molten metal, the nature of the mould used and, especially, the design of the way metal flows into the mould are key parameters in a foundry, determining both the quality of the finished castings and the labour, energy and metal usage efficiency of the foundry. Vesuvius' products and associated services to foundries improve these parameters.

Foundry Division	**H1 2021 (£m)**	**H1 2020 (£m)**	**Change (%)**	**Underlying change (%)**
Foundry Revenue	237.8	203.7	17%	22%
Foundry Trading Profit	23.9	12.2	96%	119%
Foundry Return on Sales	10.1%	6.0%	410 bps	450 bps

Foundry end-markets across all regions also posted significant growth, with production in the global light vehicle, medium & heavy commercial vehicle and mining & construction end markets up 29.7%, 20.3% and 16.4%, respectively, according to IHS and Oxford Economics data. Compared to H1 2019, global light vehicle production is down 12.3%, whilst medium & heavy commercial vehicles is up 2.1% and mining & construction is up 6.1%. The lagging recovery versus 2019 levels in the light vehicles market reflects the global shortage of semi-conductors, which has constrained the ability of OEMs to ramp-up production.

Vesuvius' Foundry Division reported revenues of £237.8m in H1 2021, an increase of 17% compared to H1 2020. On an underlying basis, Foundry Division revenue was up 22%.

The Foundry Division also achieved meaningful margin recovery, with trading profit growing 119% on an underlying basis to £23.9m, as Return on Sales expanded 450bps to 10% in H1 2021.

Foundry Revenue	H1 2021 (£m)	H1 2020 (£m)	Change (%)	Underlying change (%)
Americas	48.6	44.1	10%	24%
Europe, Middle East & Africa (EMEA)	104.4	90	16%	18%
Asia-Pacific	84.7	69.6	22%	27%
Total Foundry Revenue	237.8	203.7	17%	22%

Foundry revenues in the Americas grew 24% year-on-year on an underlying basis, driven by 12% growth in NAFTA, and very strong performance in South America, which was up 78%.

In EMEA, revenues increased by 18%, with EEMEA (EMEA excluding EU 27+UK) growing at 24% and the EU 27+UK growing at 18%.

In Asia Pacific, we benefitted from continued strong performance in China, where revenues grew 27% and India where revenues grew 66%.

Financial Review

The following review considers a number of our financial KPIs and sets out other relevant financial information.

Basis of Preparation

All references in this financial review are to headline performance unless stated otherwise. See Note 16 to the Condensed Group Financial Statements for the definition of headline performance.

H1 2021 performance overview

The Group performed well in H1 2021 and we are encouraged by the positive trends in our key end markets of steel and foundry. Reported revenue increased by £88.1m over the prior year and by £124.3m on an underlying basis (+18%).

However, in the first half of the year, our business has experienced increasing raw material prices and supply chain disruption which has caused some temporary friction costs. Nevertheless, the Group has continued to deliver on our strategic priorities while also achieving further efficiencies in the management of working capital.

Trading profit for H1 2021 was £73.3m, 54% higher than prior year on an underlying basis. Return on sales was 9.1%, higher than prior year by 220bps on an underlying basis.

The Group's cash conversion in H1 2021 was impacted by an increase in working capital to support the revenue growth.

Dividend

The Board has declared an interim dividend of 6.2 pence per share to be paid on 17 September 2021 to shareholders on the register at the close of business on 6 August 2021. Any shareholder wishing to participate in the Vesuvius Dividend Reinvestment Plan needs to have submitted their election to do so by 26 August 2021.
It remains the Board's intention to deliver long-term dividend growth, provided this is supported by underlying earnings, cash flows, capital expenditure requirements and the prevailing market outlook.

Key Performance Indicators

We have identified a number of KPIs against which we have consistently reported. As with prior years, we measure our results on an underlying basis, where we adjust to ensure appropriate comparability between periods, irrespective of currency fluctuations and any business acquisitions and disposals.

This is done by:

- Restating the previous period's results at the same foreign exchange (FX) rates used in the current period
- Removing the results of disposed businesses in both the current and prior years
- Removing the results of acquired businesses in both the current and prior years

Therefore, for 2021, we have retranslated 2020 results at the FX rates used in calculating the 2021 results. There were no acquisitions or disposals in the current or prior years and consequently no additional adjustments were required.

Objective: Deliver growth

KPI: Underlying revenue growth

Reported revenue for H1 2021 was £808.1m. Reported revenue for H1 2020 was £720.0m which equated to £683.8m on an underlying basis. H1 2021 underlying revenue increased by 18% year-on-year. The strong increase in revenue has been driven by a recovery across geographies in both our steel and foundry end-markets versus 2020.

£m	H1 2021 Revenue			H1 2020 Revenue				% change	
	As reported	Acquisition/ Disposals	Underlying	As reported	Currency	Acquisition/ Disposals	Underlying	Reported	Underlying
Steel	**570.3**	**-**	**570.3**	516.3	(26.7)	-	489.6	11%	17%
Foundry	**237.8**	**-**	**237.8**	203.7	(9.5)	-	194.2	17%	22%
Total Group	**808.1**	**-**	**808.1**	720.0	(36.2)	-	683.8	12%	18%

Objective: Generate sustainable profitability and create shareholder value

KPI: Trading profit and Return on Sales

We continue to measure underlying trading profit of the Group as well as trading profit as a percentage of sales, which we refer to as our Return on Sales or RoS.

Trading profit for H1 2021 was £73.3m and Return on Sales was 9.1%. On an underlying basis, trading profit increased by 54% and Return on Sales by 220bps versus prior year. The increase in trading profit and Return on Sales is due to higher revenue and ongoing delivery of benefits from the restructuring programme partially offset by temporary friction costs linked to supply chain disruptions.

In H1 2021, the Steel Division recorded Return on Sales of 8.7%, a 120bps underlying improvement from H1 2020 Trading profit increased by 35% on an underlying basis, to £49.4m during the period. Return on Sales in the Foundry Division increased by 450bps year-on-year on an underlying basis, to 10% in H1 2021. Trading profit was £23.9m representing a 119% increase on an underlying basis versus prior year.

£m	H1 2021 Trading profit			H1 2020 Trading profit				% change	
	As reported	Acquisition/ Disposals	Underlying	As reported	Currency	Acquisition/ Disposals	Underlying	Reported	Underlying
Steel	**49.4**	**-**	**49.4**	38.9	(2.4)	-	36.5	27%	35%
Foundry	**23.9**	**-**	**23.9**	12.2	(1.3)	-	10.9	96%	119%
Total Group	**73.3**	-	**73.3**	51.1	(3.6)	-	47.5	43%	54%

KPI: Headline PBT and Headline EPS

Headline profit before tax (PBT) and headline earnings per share (EPS) are used to measure the underlying financial performance of the Group. The main difference between trading profit and PBT is net finance costs which were £3.6m in H1 2021, £2.3m lower than H1 2020.

Our Headline PBT was £70.3m, 53% above last year on a reported basis. After amortisation of acquired intangibles of £4.8m, our PBT of £65.5m was 89% higher than H1 2020. Headline EPS from continuing operations at 17.9p is 54% higher than H1 2020.

KPI: Return on net assets (RONA)

RONA is our principal measure of capital efficiency. We do not exclude the results of businesses acquired and disposed from this calculation, as capital efficiency is an important consideration in our portfolio decisions. It is calculated by dividing trading profit plus our share of profits from joint ventures by our average operating assets (property, plant and equipment, trade working capital and interests in joint ventures and associates, investments, and other operating receivables, payables and provisions).

As with most of our KPIs, we measure this on a 12-month moving average basis at average exchange rates for the period to ensure that we focus on sustainable underlying improvements. Our RONA for H1 2021 was 20.2% (2020: half year 19.6%; full year 16.0%).

Objective: Maintain strong cash generation and an efficient capital structure

KPI: Free cash flow and working capital

Fundamental to ensuring that we have adequate capital to execute our corporate strategy is converting our profits into cash, partly through strict management of our working capital. The Group generated adjusted operating cash flows of £37.9m, representing a 46% decrease versus H1 2020. This implies a cash conversion rate in H1 2021 of 52% (2020: half year 137%; full year 171%). H1 2021 cash conversion was impacted by growing working capital to sustain revenue growth and investments in capex. Free cash flow from continuing operations was £16.4m in H1 2021 (2020: half year £43.9m; full year £113.5m).

We measure working capital both in terms of actual cash flow movements, and as a percentage of sales revenue. Trade working capital as a percentage of sales in H1 2021 was 20.7% (2020: half year 24.6%; full year 23.2%), measured on a 12-month moving average basis. In absolute terms on a constant currency basis trade working capital increased by £51.2m in H1 2021.

KPI: Net debt and interest cover

Following the refinancing of the Group's syndicated bank facility on 5th July 2021, the Group had committed borrowing facilities of £664.0m as at 30th June 2021 (2020: half year £942.8m; full year £586.6m), of which £348.7m was undrawn (2020: half year £254.7m; full year £246.5m).

Net Debt at 30 June 2021 stood at £196.6m, up from £175.1m at the end of 2020. Our adjusted operating cash flow was £37.9m, offset by the payment of the 2020 Final dividend of £38.7m in May 2021, £3.4m of net finance cost, and £13.7m of income taxes paid.

At the end of H1 2021, the net debt to EBITDA ratio was 1.1x (2020: half year 1.2x; full year 1.2x) and EBITDA to interest was 21.4x (2020: half year 18.0x; full year 14.5x). These ratios are monitored regularly to ensure that the Group has sufficient financing available to run the business and fund future growth.

The Group's debt facilities have two financial covenants: the ratios of net debt to EBITDA (maximum 3.25x limit) and EBITDA to interest (minimum 4x limit). Certain adjustments are made to the net debt calculations for bank covenant purposes, the most significant of which is to exclude the impact of IFRS 16.

Objective: Be at the forefront of innovation

KPI: R&D Spend

We believe that our market-leading product technology and services deliver fundamental value to our customers and that the primary mechanism to deliver that value is to invest significantly in research and development. In H1 2021, we spent £14.8m on R&D activities (2020: half year £13.6m; full year £26.8m at constant 2021 currency), which represents 1.8% of our revenue (2020: half year 2.0%; full year 1.9%).

Financial Risk Factors

The Group undertakes regular risk reviews and, as a minimum, a full risk assessment process twice a year. As in previous years this included input from the Board in both the assessment of risk and the proposed mitigation. We consider the main financial risks faced by the Group as being those posed by a decline in our end-markets, leading to reduced revenue and profit as well as potential customer default. We also monitor carefully the challenges that come from broader financial uncertainty, which could bring lack of liquidity and market volatility. Important but lesser risk exists in interest rate movements, foreign exchange rate movements and cost inflation, but these are not expected to have a material impact on the business after considering the controls we have in place.

Our key mitigation of end-market risk is to manage the Group's exposure through balancing our portfolio of business geographically and to invest in product innovation. We do so through targeted capital investment in new and growing businesses and a combination of capital and human resource in emerging markets. When considering other financial risks, we mitigate liquidity concerns by financing, using both the bank and private placement markets. The Group also seeks to avoid a concentration of debt maturities in any one period to spread its refinancing risk. Following the refinancing of the Group's syndicated bank facility on 5th July 2021, our liquidity would have stood at £488.5m at 30th June 2021. We define liquidity as undrawn committed debt facilities plus our cash on balance sheet, less the cash in China which is used as collateral against an equivalent loan from Standard Chartered Bank.

Restructuring
In H1 2021, we benefitted from £2.5m of savings from the restructuring activities undertaken in 2020. During the period, we reported no restructuring costs (2020: half year £2.5m; full year £6.1m) within separately reported items. We are carrying forward a restructuring provision of £6.0m.

Vacant site remediation
The Group owns a number of disused properties in the US, which do not form part of our trading operations. Costs are being incurred at one of these sites to address the significant increase in the volume of water run-off occurring in 2019 and 2020. We have engaged waste management specialists, are taking actions to reduce the level of water (including hydrological studies) and are in contact with the relevant regulatory authorities. We estimate that it will take 12 months to finalise remediation. The costs in H1 2021 for this remediation are £nil (2020 half year: £3.8m, 2020 full year: £10.3m). These non-recurring costs were treated as a separately reported item. There was no impact upon headline performance. Cash spend on vacant site remediation during the period was £1.0m (2020 half year: £1.2m, 2020 full year: £1.9m).

Taxation
A key measure of the Group's tax burden is the effective tax rate, which the Group calculates on the income tax associated with headline performance, divided by the headline profit before tax and before the Group's share of post-tax profit of joint ventures. The Group's effective tax rate was in-line with expectations at 26.5% in H1 2021 (2020: half year 27.2%; full year 26.9%) based on the income tax costs associated with headline performance of £18.5m (2020: half year £12.3m; full year £24.4m).
We expect the Group's effective tax rate on headline profit before tax and before the share of post-tax profits from joint ventures to be between 26% and 27% in 2021.

Capital expenditure
Capital expenditure in H1 2021 was £20.6m (2020: half year £26.2m; full year £59.0m) of which £16.1m in the Steel Division (2020: half year £22.5m; full year £45.9m) and £4.5m in the Foundry Division (2020: half year £3.7m; full year £13.1m). Capital expenditure on revenue-generating customer installation assets, primarily in Steel, was £2.3m (2020: half year £4.1m; full year £8.7m).

Pensions
The Group has a limited number of historical defined benefit plans located mainly in the UK, USA, Germany and Belgium. The main plans in the UK and USA are largely closed to further benefits accrual and 57% of the liabilities in the UK have already been insured. The Group's net pension surplus at 30 June 2021 was £10.9m (2020 full year: £2.1m deficit). The improvement is largely attributable to £8.5m from changes to actuarial assumptions (increasing discount rates; updated mortality assumptions and pension membership data) which was mainly due to an increase in bond yields resulting in a reduction in the value of German and US liabilities, as well as foreign exchange gains of £3.7m.

Principal Risks and Uncertainties

Risk Management

The Board's oversight of principal risks involves a specific review of the processes by which the Group manages those risks. This establishes a clear understanding at Board level of the individuals and groups within the business formally responsible for the management of specific risks and the mitigation in place to address them. The Board also establishes the Group's risk appetite, considering the nature and extent of the principal risks that the Group should take and the associated adequacy of the steps being taken to mitigate them.

The Board has overall responsibility for establishing and maintaining a system of risk management and internal control, and for reviewing its effectiveness. The Group undertakes a continuous process of risk identification and review, which includes a formal process, conducted annually for mapping risks from the bottom up, with each major business unit and key operational, senior functional and senior management staff identifying their principal risks. This assessment undergoes a formal review at half-year. The results are compiled centrally to deliver a coordinated picture of the key operational risks identified by the business. These are further reviewed by the Group Executive Committee. In conjunction with this process, each Director contributes their individual view of top-down strategic risks facing the Group – drawing on the broad commercial and financial experience gained both inside and outside the Group. The results of this assessment are then overlaid on the internal assessment of risks to build a comprehensive analysis of existing and emerging risk. This review process extends to cover both financial and non-financial risks, and considers the risks associated with the impact of the Group's activities on employees, customers, suppliers, the environment, local communities and society more generally.

Risk Mitigation

The principal risks identified are actively managed in order to mitigate exposure. Senior management 'owners' have been identified for each principal risk, and they manage the mitigations of that specific risk and contribute to the analysis of its likelihood and materiality. This analysis is reported to the Board. The risks are analysed in the context of our business structure which gives protection against a number of principal risks we face with diversified currencies, a widespread customer base, local production matching the diversity of our markets and intensive training of our employees. Additionally, we seek to mitigate risk through contractual measures. Where cost-effective, the risk is transferred to insurers.

Principal Risks

The risks identified are those the Board considers to be the most relevant to the Group in relation to their potential impact on the achievement of its strategic objectives. All of the risks set out in this announcement could materially affect the Group, its businesses, future operations and financial condition, and could cause actual results to differ materially from expected or historical results. As a result of Covid-19 there is heightened focus on risks and their mitigation, but the Group's principal risks remain the same. These risks are not the only ones that the Group will face. Some risks are not yet known and some currently not deemed to be material could become so.

Changes to Risk in 2021

During 2021, the Board has continued to review the Group's existing and emerging risks, and to focus on the processes for mitigating and managing these risks. The Board believes that there has been no material change to the Group's principal risks and uncertainties during the half-year and that the ongoing Covid-19 pandemic has not given rise to any change in the principal risks previously identified by the Group, which are set out in the table below. The Board fully recognises that with the changing economic and social pressures brought about by Covid-19, including remote working and less face-to-face management presence, there is an increased need to ensure that risks and their mitigation are properly assessed. Whilst there has been an overall improvement in markets as restrictions ease in some countries, as with the vast majority of companies, the Covid-19 pandemic continues to impact the Group's staff, customers, shareholders and suppliers, and as a consequence the Group's management processes and financial performance. As a result, the Group maintains a heightened focus on risk and its mitigation. The risks that materialised in 2020 continue to be closely managed with mitigating measures in place. These are most notably:

<u>End Market Risk:</u> Whilst Vesuvius continues to experience demand for its products below pre Covid-19 levels in some key regions, the overall market has significantly improved from 2020 and continues on this trend, albeit with certain geographies remaining more affected than others. The Group has continued to focus on careful

management of its cost base including management of working capital and scrutiny of plant performance and staffing levels as activity increases. Vesuvius repaid the UK Government Financing received at the beginning of the pandemic and only a small number of staff remain on any of the furlough schemes in place around the world. The various Tax Deferral schemes available to Vesuvius continue.

People, Culture and Performance: Management continues to place its people as its highest priority. The majority of the pandemic-related measures established in 2020 have continued into 2021. Many staff continue to work from home but there is an increasing trend of staff returning to their offices where circumstances and regulation allows. There continue to be regular interactive internal communication calls involving the CEO and GEC members and a regular Newsletter providing CEO messages and details of best practices, successes, and news from around the Group. The focus on values continues with employee family initiatives, the continuing of our Living the Values Awards competition and support for local communities around the world.

Business interruption: Whilst the Group did suffer some initial disruption in its manufacturing processes, driven predominantly by government shutdowns at the start of the Covid-19 pandemic, since this time all plants have been open and operating. For those working from home, the Group has embedded the measures that facilitate the use of virtual meetings between staff from all over the world. Lessons have been learned and contingency plans have been updated to seek to ensure the continued operation of all plants in the event of any further lockdowns around the world. Vesuvius has been successful in fulfilling every order placed by our customers over the course of the pandemic, whilst ensuring that production processes continue to respect the social distancing rules in each country. The result of some of the steps taken to mitigate disruption have included higher freight and expedited costs in the year as a result of supply chain disruptions.

Management's responsiveness continues to ensure all the principal risks are managed effectively with product quality remaining at its high level, our safety culture driving key responses to protect employees and our continued investment in Research and Development to drive new product introductions.

Additional Medium to Long Term Considerations
Given the protracted nature of the pandemic, management's response to the following risks continues to be closely evaluated:

- Protectionism and globalisation giving rise to disruption of global supply chains and movement of people.
- Further end market risks arising from a prolonged recession of the global economy.
- People, culture and performance with the need to ensure the ongoing mental health of staff subject to protracted periods of remote working against a background of uncertain/ anxious times.
- ESG, with an increased focus on employee and social issues as the longer-term effects of the pandemic become clearer.

The Board has continued to monitor the implications of certain other emerging 'macro' trends such as automation in manufacturing and increasing digitalisation, both of which could act as disruptors to industry, and has retained focus on the increasing issues posed by cyber threats, with further investments approved to develop and implement strategies to deal with these.

Climate Change
The Group's risk management processes incorporate consideration of the potential impact of climate-related risks on the Group. The Group does not regard climate change itself to represent a material standalone risk for the Group's operations. However, a significant proportion of the Group's revenue is generated from Steel manufacture and automotive castings, industries that are under transition as a result of their focus on improving environmental performance. As such, the opportunities in the Group's business strategy, which is founded on helping our customers to improve their manufacturing efficiency and the quality of their products – and therefore reduce their climate impact – will play a critical part in the development of the Group going forward. The Group recognises that climate change could present further uncertainty for the Group in terms of increasing climate change-related regulations, evolution of the geographical distribution of our customer base and the costs of meeting more onerous disclosure requirements.

ESG is identified as a separate element of the Group risk register – recognising the work Vesuvius can do to mitigate the environmental impact of our customers' processes. Other elements of this risk are incorporated into the appropriate Principal Risk and Uncertainties that the Group has identified. The Group continues to focus internally on the action we can take to drive our business' sustainability. In 2020, the Group adopted a new Sustainability initiative, which sets out the Group's approach to environmental issues, sets targets in specific areas and as such seeks to mitigate issues such as the increasing costs of energy, and the potential reduction in capital accessibility as investor sentiment focuses on environmentally-conscious companies. In 2021 the Group has continued to progress its sustainability initiative, building its analyses and further developing and mapping our risks and opportunities linked to climate change. All our businesses are also focused on progressing the Group's achievement of its sustainability targets.

Principal risks and uncertainties:

Risk	**Potential impact**	**Mitigation**
End market risks *Vesuvius suffers an unplanned drop in demand, revenue and/ or margin because of market volatility beyond its control*	• Unplanned drop in demand and/or revenue due to reduced production by our customers • Margin reduction • Customer failure leading to increased bad debts • Loss of market share to competition • Cost pressures at customers leading to use of cheaper solutions	• Geographic diversification of revenues • Product innovation and service offerings securing long-term revenue streams and maintaining performance differential • Increase in service and product lines by the development of the Technical Services offering • R&D includes assessment of emerging technologies • Manufacturing capacity rationalisation and flexible cost base • Diversified customer base: no customer is greater than 10% of revenue • Robust credit and working capital control to mitigate the risk of default by counterparties
Protectionism and globalisation *The Vesuvius business model cannot adapt or respond quickly enough to threats from protectionism and globalisation*	• Restricted access to market due to enforced preference of local suppliers • Increased barriers to entry for new businesses or expansion • Increased costs from import duties, taxation or tariffs • Loss of market share • Trade restrictions	• Highly diversified manufacturing footprint with manufacturing sites located in 26 countries • Strong local management with delegated authority to run their businesses and manage customer relationships • Cost flexibility • Tax risk management and control framework together with a strong control of inter-company trading

Risk	Potential impact	Mitigation
Product quality failure *Vesuvius staff/contractors are injured at work or customers, staff or third parties suffer physical injury or financial loss because of failures in Vesuvius products*	• Injury to staff and contractors • Product or application failures lead to adverse financial impact or loss of reputation as technology leader • Incident at customer plant caused manufacturing downtime or damage to infrastructure • Customer claims from product quality issues	• Quality management programmes including stringent quality control standards, monitoring and reporting • Experienced technical staff knowledgeable in the application of our products and technology • Targeted global insurance programme • Experienced internal legal function controlling third-party contracting
Complex and changing regulatory environment *Vesuvius experiences a contracting customer base or increased transaction and administrative costs due to compliance with changing regulatory requirements*	• Revenue reduction from reduced end-market access • Disruption of supply chain and route to market • Increased internal control processes • Increased frequency of regulatory investigations • Reputational damage	• Compliance programmes and training across the Group • Internal Audit function • Experienced internal legal function including dedicated compliance specialists • Global procurement category management of strategic raw materials
Failure to secure innovation *Vesuvius fails to achieve continuous improvement in its products, systems and services*	• Product substitution by customers • Increased competitive pressure through lack of differentiation of Vesuvius offering • Commoditisation of product portfolio through lack of development • Lack of response to changing customer needs • Loss of intellectual property protection	• Enduring and significant investment in R&D, with market-leading research • A shared strategy for innovation throughout the Group, deployed via our R&D centres • Stage gate process from innovation to commercialisation to foster innovation and increase alignment with strategy • Programme of manufacturing and process excellence • Quality programme, focused on quality and consistency • Stringent intellectual property registration and defence
Business interruption *Vesuvius loses production capacity or experiences supply chain disruption due to physical site damage (accident, fire, natural disaster, terrorism), industrial action, cyber attack or global health crisis*	• Loss/closure of a major plant temporarily or permanently impairing our ability to serve our customers • Damage to or restriction in ability to use assets • Denial of access to critical systems or control processes • Disruption of manufacturing processes • Inability to source critical raw materials	• Diversified manufacturing footprint • Disaster recovery planning • Business continuity planning with strategic maintenance of excess capacity • Physical and IT control systems security, access and training • Cyber risks integrated into wider risk-management structure • Well-established global insurance programme • Group-wide safety management programmes

Risk	Potential impact	Mitigation
		• Dual sourcing strategy and development of substitutes
People, culture and performance *Vesuvius is unable to attract and retain the right calibre of staff, fails to instil an appropriate culture or fails to embed the right systems to drive personal performance in pursuit of the Group's long-term growth*	• Organisational culture of high performance is not achieved • Staff turnover in growing economies and regions • Stagnation of ideas and development opportunities • Loss of expertise and critical business knowledge • Reduced management pipeline for succession to senior positions	• Internal focus on talent development and training, with tailored career-stage programmes and clear performance management strategies • Contacts with universities to identify and develop talent • Career path planning and global opportunities for high-potential staff • Internal programmes for the structured transfer of technical and other knowledge • Clearly defined Values underpin business culture
Health and safety *Vesuvius staff or contractors are injured at work because of failures in Vesuvius' operations, equipment or processes*	• Injury to staff and contractors • Health and safety breaches • Manufacturing downtime or damage to infrastructure from incident at plant • Inability to attract the necessary workforce • Reputational damage	• Active safety programmes, with ongoing wide-ranging monitoring and safety training • Independent safety audit team • Quality management programmes including stringent manufacturing process control standards, monitoring and reporting
Environmental, social and governance (ESG) criteria *Vesuvius fails to capitalise on the opportunity to help its customers significantly reduce their carbon emissions as environmental pressure grows on the Steel Industry or Vesuvius fails to meet the expectations of its various stakeholders including employees and investors*	• Loss of opportunity to grow sales • Loss of opportunity to increase margin • Loss of stakeholder confidence including Investors • Reputational damage	• Development and implementation of a new Sustainability initiative, which includes stretching targets focused on reducing the Group's Energy usage, CO_2 emissions, waste and recycled materials • R&D focus on products that assist customers to reduce carbon emissions and improve their own sustainability measures • Skilled technical sales force to develop efficient solutions for our customers • Globally disseminated Code of Conduct sets out standards of conduct expected and ABC Policy adopted with a zero tolerance regarding bribery and corruption • Internal Speak up mechanisms to allow reporting of concerns • Extensive use of due diligence to assess existing and potential business partners and customers

Half Year Results for the six months ended 30 June 2021
Directors' responsibility statement

We confirm that to the best of our knowledge:

(a) The Condensed Group Financial Statements have been prepared in accordance with IAS 34, Interim Financial Reporting, as contained in UK-adopted IFRS (UK-adopted international accounting standards); and

(b) This half-yearly financial report includes a fair review of the information required by:

- DTR 4.2.7R of the Disclosure and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed set of financial statements; and a description of the principal risks and uncertainties for the remaining six months of the financial year; and
- DTR 4.2.8R of the Disclosure and Transparency Rules, being related parties' transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or the performance of the Group during that period; and any changes in the related parties' transactions described in the last annual report that could do so.

The names and functions of the Directors of Vesuvius plc are as follows:

John McDonough CBE	Chairman
Patrick André	Chief Executive
Guy Young	Chief Financial Officer
Douglas Hurt	Non-executive Director, Senior Independent Director and Chairman of the Audit Committee
Kath Durrant	Non-executive Director and Chairman of the Remuneration Committee
Dinggui Gao	Non-executive Director
Friederike Helfer	Non-executive Director
Jane Hinkley	Non-executive Director

On behalf of the Board

Guy Young
Chief Financial Officer
28 July 2021

Independent review report to Vesuvius plc
Report on the Condensed Group Financial Statements

Our conclusion
We have reviewed Vesuvius plc's Condensed Group Financial Statements (the "interim financial statements") in the Half Year Results of Vesuvius plc for the 6 month period ended 30 June 2021 (the "period").
Based on our review, nothing has come to our attention that causes us to believe that the interim financial statements are not prepared, in all material respects, in accordance with UK adopted International Accounting Standard 34, 'Interim Financial Reporting' and the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom's Financial Conduct Authority.

What we have reviewed
The interim financial statements comprise:
- the Condensed Group Balance Sheet as at 30 June 2021;
- the Condensed Group Income Statement and Condensed Group Statement of Comprehensive Income for the period then ended;
- the Condensed Group Statement of Cash Flows for the period then ended;
- the Condensed Group Statement of Changes in Equity for the period then ended; and
- the explanatory notes to the interim financial statements.

The interim financial statements included in the Half Year Results of Vesuvius plc have been prepared in accordance with UK adopted International Accounting Standard 34, 'Interim Financial Reporting' and the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom's Financial Conduct Authority.

Responsibilities for the interim financial statements and the review

Our responsibilities and those of the directors
The Half Year Results, including the interim financial statements, is the responsibility of, and has been approved by the directors. The directors are responsible for preparing the Half Year Results in accordance with the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom's Financial Conduct Authority.
Our responsibility is to express a conclusion on the interim financial statements in the Half Year Results based on our review. This report, including the conclusion, has been prepared for and only for the company for the purpose of complying with the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom's Financial Conduct Authority and for no other purpose. We do not, in giving this conclusion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

What a review of interim financial statements involves
We conducted our review in accordance with International Standard on Review Engagements (UK and Ireland) 2410, 'Review of Interim Financial Information Performed by the Independent Auditor of the Entity' issued by the Auditing Practices Board for use in the United Kingdom. A review of interim financial information consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures.

A review is substantially less in scope than an audit conducted in accordance with International Standards on Auditing (UK) and, consequently, does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.
We have read the other information contained in the Half Year Results and considered whether it contains any apparent misstatements or material inconsistencies with the information in the interim financial statements.

PricewaterhouseCoopers LLP
Chartered Accountants
London
28 July 2021

Condensed Group Income Statement

For the six months ended 30 June 2021

Continuing operations	Notes	**Half year 2021 (Unaudited)** Headline performance[1] £m	Separately reported items[1] £m	Total £m	Half year 2020 (Unaudited) Headline performance[1] £m	Separately reported items[1] £m	Total £m	Full year 2020 Headline performance[1] £m	Separately reported items[1] £m	Total £m
Revenue	2	**808.1**	-	**808.1**	720.0	-	720.0	**1,458.3**	-	**1,458.3**
Manufacturing costs		**(592.6)**	-	**(592.6)**	(534.7)	-	(534.7)	**(1,084.7)**	-	**(1,084.7)**
Administration, selling & distribution costs		**(142.2)**	-	**(142.2)**	(134.2)	-	(134.2)	**(272.2)**	-	**(272.2)**
Trading profit	2, 1	**73.3**	-	**73.3**	51.1	-	51.1	**101.4**	-	**101.4**
Amortisation of acquired intangible assets		-	**(4.8)**	**(4.8)**	-	(5.0)	(5.0)	-	**(9.9)**	**(9.9)**
Restructuring charges	3	-	-	-	-	(2.5)	(2.5)	-	**(6.1)**	**(6.1)**
Vacant site remediation costs		-	-	-	-	(3.8)	(3.8)	-	**(10.3)**	**(10.3)**
GMP equalisation charge	10				-	-	-	-	**(0.8)**	**(0.8)**
Operating profit/(loss)	2	**73.3**	**(4.8)**	**68.5**	51.1	(11.3)	39.8	**101.4**	**(27.1)**	**74.3**
Finance expense		**(6.2)**	-	**(6.2)**	(8.9)	-	(8.9)	**(18.8)**	-	**(18.8)**
Finance income		**2.6**	-	**2.6**	3.0	-	3.0	**7.9**	-	**7.9**
Net finance costs	4	**(3.6)**	-	**(3.6)**	(5.9)	-	(5.9)	**(10.9)**	-	**(10.9)**
Share of post-tax income of joint ventures		**0.6**	-	**0.6**	0.7	-	0.7	**1.1**	-	**1.1**
Profit/(loss) before tax	2	**70.3**	**(4.8)**	**65.5**	45.9	(11.3)	34.6	**91.6**	**(27.1)**	**64.5**
Income tax (charge)/credits	5	**(18.5)**	**(0.7)**	**(19.2)**	(12.3)	2.6	(9.7)	**(24.4)**	**5.7**	**(18.7)**
Profit/(loss)		**51.8**	**(5.5)**	**46.3**	33.6	(8.7)	24.9	**67.2**	**(21.4)**	**45.8**
Profit/(loss) attributable to:										
Owners of the parent		**48.5**	**(5.5)**	**43.0**	31.3	(8.7)	22.6	**62.7**	**(21.4)**	**41.3**
Non-controlling interests		**3.3**	-	**3.3**	2.3	-	2.3	**4.5**	-	**4.5**
Profit/(loss)		**51.8**	**(5.5)**	**46.3**	33.6	(8.7)	24.9	**67.2**	**(21.4)**	**45.8**
Earnings per share — pence	6									
Total operations — basic				**15.9**			8.4			**15.3**
— diluted				**15.8**			8.3			**15.2**

(1) *Headline performance is defined in Note 16.1 and separately reported items are defined in Note 1.5.*

The above results were derived from continuing operations. The separately reported items would form part of Administration, selling & distribution costs if classified within headline performance, which including these amounts would total £147.0m (2020 half year: £145.5m, 2020 full year: £299.3m).

Condensed Group Statement of Comprehensive Income

For the six months ended 30 June 2021

	Notes	**Unaudited Half year 2021 £m**	Unaudited Half year 2020 £m	Full year 2020 £m
Profit		**46.3**	24.9	45.8
Items that will subsequently not be reclassified to income statement:				
Remeasurement of defined benefit assets/liabilities		**8.5**	14.9	7.7
Income tax relating to items not reclassified	5	**(9.6)**	(5.6)	(3.2)
Items that may subsequently be reclassified to income statement:				
Exchange differences on translation of the net assets of foreign Operations		**(28.8)**	51.0	(14.9)
Exchange differences arising on translation of net investment hedges		**10.3**	(24.6)	(9.7)
Net change in costs of hedging		**(0.3)**	-	0.4
Change in the fair value of the hedging instrument		**(0.2)**	-	(8.1)
Amounts reclassified from the income statement		**0.7**	-	6.3
Other comprehensive income (loss), net of income tax		**(19.4)**	35.7	(21.5)
Total comprehensive income		**26.9**	60.6	24.3
Total comprehensive income attributable to:				
Owners of the parent		**24.9**	57.5	22.0
Non-controlling interests		**2.0**	3.1	2.3
Total comprehensive income		**26.9**	60.6	24.3

The above results were derived from continuing operations

Condensed Group Statement of Cash Flows

For the six months ended 30 June 2021

	Notes	**Unaudited Half year 2021 £m**	Unaudited Half year 2020 £m	Full year 2020 £m
Cash flows from operating activities				
Cash generated from operations	9	**50.2**	79.2	193.7
Interest paid		**(5.5)**	(8.2)	(18.9)
Interest received		**2.1**	2.5	5.2
Net interest paid		**(3.4)**	(5.7)	(13.7)
Income taxes paid		**(13.7)**	(11.5)	(27.5)
Net cash inflow from operating activities		**33.1**	62.0	152.5
Cash flows from investing activities				
Capital expenditure		**(17.6)**	(19.4)	(40.5)
Proceeds from the sale of property, plant and equipment		**0.6**	-	1.1
Acquisition of subsidiaries and joint ventures, net of cash acquired	13	**-**	-	(1.4)
Dividends received from joint ventures		**1.0**	1.4	2.3
Net cash outflow from investing activities		**(16.0)**	(18.0)	(38.5)
Net cash inflow before financing activities		**17.1**	44.0	114.0
Cash flows from financing activities				
Proceeds from borrowings	8	**-**	310.2	320.4
Repayment of borrowings	8	**(22.5)**	(92.5)	(438.6)
Settlement of derivatives		**-**	1.4	1.4
Purchase of ESOP Shares		**-**	-	-
Dividends paid to equity shareholders	7	**(38.7)**	-	(8.4)
Dividends paid to non-controlling shareholders		**(0.7)**	(0.1)	(1.9)
Net cash inflow/(outflow) from financing activities		**(61.9)**	219.0	(127.1)
Net (decrease)/increase in cash and cash equivalents	8	**(44.8)**	263.0	(13.1)
Cash and cash equivalents at 1 January		**206.8**	222.1	222.1
Effect of exchange rate fluctuations on cash and cash equivalents		**(4.0)**	6.8	(2.2)
Cash and cash equivalents at the end of the reporting period		**158.0**	491.9	206.8
Free cash flow	16.11			
Net cash inflow from operating activities		**33.1**	62.0	152.5
Capital expenditure		**(17.6)**	(19.4)	(40.5)
Proceeds from the sale of property, plant and equipment		**0.6**	-	1.1
Proceeds from the sale of assets classified as held for sale		**-**	-	-
Dividends received from joint ventures		**1.0**	1.4	2.3
Dividends paid to non-controlling shareholders		**(0.7)**	(0.1)	(1.9)
Free cash flow[1]	16.11	**16.4**	43.9	113.5

(1) *For definitions of non-GAAP measures, refer to Note 16*

Condensed Group Balance Sheet

As at 30 June 2021

	Notes	**Unaudited Half year 2021 £m**	Unaudited Half year 2020 £m	Full year 2020 £m
Assets				
Property, plant and equipment		**325.1**	348.2	337.5
Intangible assets		**675.5**	732.3	696.1
Employee benefits - surpluses	10	**113.2**	116.3	117.1
Interests in joint ventures and associates		**11.6**	12.6	12.1
Investments		**0.9**	1.1	0.7
Deferred tax assets		**84.9**	95.1	96.1
Other receivables		**17.7**	23.3	18.6
Derivative financial instruments	15	**-**	-	-
Total non-current assets		**1,228.9**	1,328.9	1,278.2
Cash and short-term deposits	8	**162.1**	500.9	209.7
Inventories		**236.9**	222.4	187.3
Trade and other receivables		**410.2**	361.8	369.9
Income tax receivable		**1.8**	1.7	3.7
Derivative financial instruments	15	**-**	-	0.2
Assets classified as held for sale		**0.9**	-	0.9
Total current assets		**811.9**	1,086.8	771.7
Total assets		**2,040.8**	2,415.7	2,049.9

Condensed Group Balance Sheet (continued)

As at 30 June 2021

	Notes	**Unaudited Half year 2021 £m**	Unaudited Half year 2020 £m	Full year 2020 £m
Equity				
Issued share capital		**27.8**	27.8	27.8
Retained earnings		**2,508.1**	2,496.1	2,502.9
Other reserves		**(1,468.3)**	(1,401.9)	(1,451.3)
Equity attributable to the owners of the parent		**1,067.6**	1,122.0	1,079.4
Non-controlling interests		**52.7**	54.0	51.4
Total equity		**1,120.3**	1,176.0	1,130.8
Liabilities				
Interest-bearing borrowings	8	**273.1**	351.1	333.1
Employee benefits - liabilities	10	**102.3**	116.1	119.2
Other payables		**13.0**	15.8	13.2
Provisions	14	**32.4**	36.0	34.0
Income tax liabilities		**7.7**	10.0	8.5
Deferred tax liabilities		**49.7**	46.3	43.9
Derivative financial instruments	15	**5.0**	0.6	7.0
Total non-current liabilities		**483.2**	575.9	558.9
Interest-bearing borrowings	8	**80.4**	378.8	45.0
Trade and other payables		**338.1**	265.9	288.7
Income tax payable		**1.5**	-	3.7
Provisions	14	**17.2**	19.0	22.8
Derivative financial instruments	15	**0.1**	0.1	-
Total current liabilities		**437.3**	663.8	360.2
Total liabilities		**920.5**	1,239.7	919.1
Total equity and liabilities		**2,040.8**	2,415.7	2,049.9

Condensed Group Statement of Changes in Equity

For the six months ended 30 June 2021

	Issued share capital £m	Other reserves £m	Retained earnings £m	Owners of the parent £m	Non-controlling interests £m	Total equity £m
As at 1 January 2020	**27.8**	**(1,427.5)**	**2,463.1**	**1,063.4**	**51.0**	**1,114.4**
Profit	**-**	**-**	**22.6**	**22.6**	**2.3**	**24.9**
Remeasurement of defined benefit liabilities/assets	-	-	14.9	14.9	-	14.9
Income tax relating to items not reclassified	-	-	(5.6)	(5.6)	-	(5.6)
Exchange differences on translation of the net assets of foreign operations	-	50.2	-	50.2	0.8	51.0
Exchange differences arising on translation of net investment hedges	-	(24.6)	-	(24.6)	-	(24.6)
Other comprehensive income/(loss), net of income tax	**-**	**25.6**	**9.3**	**34.9**	**0.8**	**35.7**
Total comprehensive income/(loss)	**-**	**25.6**	**31.9**	**57.5**	**3.1**	**60.6**
Recognition of share-based payments	-	-	1.1	1.1	-	1.1
Dividends paid (Note 7)	-	-	-	-	(0.1)	(0.1)
Total transactions with owners	**-**	**-**	**1.1**	**1.1**	**(0.1)**	**1.0**
As at 30 June 2020	**27.8**	**(1,401.9)**	**2,496.1**	**1,122.0**	**54.0**	**1,176.0**

	Issued share capital £m	Other reserves £m	Retained earnings £m	Owners of the parent £m	Non-controlling interests £m	Total equity £m
As at 1 January 2021	**27.8**	**(1,451.3)**	**2,502.9**	**1,079.4**	**51.4**	**1,130.8**
Profit	**-**	**-**	**43.0**	**43.0**	**3.3**	**46.3**
Remeasurement of defined benefit assets/liabilities	-	**-**	**8.5**	**8.5**	**-**	**8.5**
Income tax relating to items not reclassified	-	**-**	**(9.6)**	**(9.6)**	**-**	**(9.6)**
Exchange differences on translation of the net assets of foreign operations	-	**(27.5)**	**-**	**(27.5)**	**(1.3)**	**(28.8)**
Exchange differences arising on translation of net investment hedges	-	**10.3**	**-**	**10.3**	**-**	**10.3**
Net change in costs of hedging	-	**(0.3)**	**-**	**(0.3)**	**-**	**(0.3)**
Change in the fair value of the hedging instrument	-	**(0.2)**	**-**	**(0.2)**	**-**	**(0.2)**
Amounts reclassified from the income statement	-	**0.7**	-	**0.7**	**-**	**0.7**
Other comprehensive income/(loss), net of income tax	**-**	**(17.0)**	**(1.1)**	**(18.1)**	**(1.3)**	**(19.4)**
Total comprehensive income/(loss)	**-**	**(17.0)**	**41.9**	**24.9**	**2.0**	**26.9**
Recognition of share-based payments	-	-	**2.0**	**2.0**	**-**	**2.0**
Dividends paid (Note 7)	-	-	**(38.7)**	**(38.7)**	**(0.7)**	**(39.4)**
Total transactions with owners	**-**	**-**	**(36.7)**	**(36.7)**	**(0.7)**	**(37.4)**
As at 30 June 2021	**27.8**	**(1,468.3)**	**2,508.1**	**1,067.6**	**52.7**	**1,120.3**

Notes to the Condensed Group Financial Statements

1 Basis of preparation

1.1 Basis of accounting

These Condensed Group Financial Statements of Vesuvius plc (“Vesuvius” or the “Company”) and its subsidiary and joint venture companies (the “Group”) have been prepared in accordance with International Accounting Standard(“IAS”) 34 Interim Financial Reporting as contained in UK-adopted IFRS (UK-adopted international accounting standards) and the Disclosure Guidance and Transparency Rules sourcebook of the UK’s Financial Conduct Authority.

These Condensed Group Financial Statements have been prepared using the same accounting policies as used in the preparation of the Group’s annual financial statements for the year ended 31 December 2020, except for taxes on income in the interim period which are accrued using the tax rate that would be applicable to the expected total annual profit or loss. The assessment of the Group’s critical accounting estimates and judgements remain consistent with the 2020 Annual Report and Financial Statements. The Group’s annual report and financial statements for the year ended 31 December 2020 were prepared in accordance with International Financial Reporting Standards in conformity with the requirements of the Companies Act 2006 and the applicable legal requirements of the Companies Act 2006. In addition to complying with International Accounting Standards in conformity with the requirements of the Companies Act 2006, these Condensed Group Financial Statements also comply with International Financial Reporting Standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union. The Annual Report and Financial Statements for the year ending 31 December 2021 will be prepared in accordance with IFRS as adopted by the UK Endorsement Board. This change in the basis of preparation is required by UK company law for the purposes of financial reporting as a result of the UK’s exit from the EU on 31 January 2020 and the cessation of the transition period on 31 December 2020, and does not constitute a change in accounting policy but rather a change in the framework which is required to ground the use of IFRS in company law. There is no impact on recognition, measurement or disclosure between the two frameworks in the period reported.

The Condensed Group Financial Statements do not include all of the information required for full annual financial statements, and should be read in conjunction with the consolidated financial statements of the Group for the year-ended 31 December 2020. The financial information presented in this document is unaudited but has been reviewed by the Company’s auditor.

The comparative figures for the financial year ended 31 December 2020 are not the Group’s statutory accounts for that financial year but have been extracted from those accounts. Those accounts have been reported on by the Company’s auditor and delivered to Companies House. The report of the auditor was unqualified, did not include reference to any matters to which the auditor drew attention by way of emphasis without qualifying its report and did not contain a statement under section 498(2) or (3) of the Companies Act 2006. These sections address whether proper accounting records have been kept, whether the Company's accounts are in agreement with those records and whether the auditor has obtained all the information and explanations necessary for the purposes of its audit.

1.2 Basis of consolidation

The Condensed Group Financial Statements incorporate the financial statements of the Company and entities controlled by the Company (its “subsidiaries”). Control exists when the Company has the power to direct the relevant activities of an entity that significantly affect the entity's return so as to have rights to the variable return from its activities. In assessing whether control exists, potential voting rights that are currently exercisable are taken into account. The results of subsidiaries acquired or disposed of during the year are included in the Condensed Group Income Statement from the effective date of acquisition or up to the effective date of disposal, as appropriate.

The principal accounting policies applied in the preparation of these Condensed Group Financial Statements are set out in the Notes. These policies have been consistently applied to all of the years presented, unless otherwise stated. Where necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those detailed herein to ensure that the Condensed Group Financial Statements are prepared on a consistent basis. All intra-Group transactions, balances, income and expenses are eliminated on consolidation.

Non-controlling interests in the net assets of consolidated subsidiaries are identified separately from the Group's interest therein. Non-controlling interests consist of the amount of those interests at the date of the original business combination together with the non-controlling interests' share of profit or loss and each component of other comprehensive income less their dividends since the date of the combination. Their share of comprehensive income/(loss) is attributed to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

1.3 Going concern

The Directors have prepared cash flow scenarios for the Group for a period at least 12 months from the date of approval of the 2021 Interim Condensed Financial Statements. These forecasts reflect an assessment of current and future end market conditions and their impact on the Group's future trading performance. The analysis undertaken includes a severe but plausible downside scenario which is based on a return to a Covid impacted market as seen last year and assumes a decline in business activity and profitability in H2 2021 to the level achieved in H2 2020. Relative to H1 2021, this implies an c.8% decline in sales and a c.30% decline in EBITDA, with no improvement from this level assumed in 2022. Even in this downside scenario, the forecasts show that the Group's maximum net debt / EBITDA (pre-IFRS 16 in-line with the covenant calculation) does not exceed 1.25x, compared to a leverage covenant of 3.25x. Furthermore, the Group's available committed liquidity was £488.5m at 30 June 2021, when adjusted to reflect the increase in size of our new RCF, compared to £437.3m at 31 December 2020. Our new RCF is £385m and has a maturity date of 5 July 2025 and replaces the previous £300m RCF which was due to mature in June 2022.

On the basis of the information described above the Directors consider that the Group and the Company have adequate resources to continue in operational existence for a period of at least 12 months from the date of signing of these Interim Condensed Financial Statements. Accordingly, they continue to adopt a going concern basis in preparing the Condensed Financial Statements of the Group and the Company.

1.4 Functional and presentation currency

The financial statements are presented in millions of pounds sterling, which is the functional currency of the Company, and rounded to one decimal place.

1.5 Disclosure of "separately reported items"

Columnar presentation

The Group has adopted a columnar presentation for its Condensed Group Income Statement, to separately identify headline performance results, as the Directors consider that this gives a useful view of the underlying results of the ongoing business. As part of this presentation format, the Group has adopted a policy of disclosing separately on the face of its Group Income Statement, within the column entitled 'Separately reported items', the effect of any components of financial performance for which the Directors consider separate disclosure would assist users both in a useful understanding of the financial performance achieved for a given year and in making projections of future results.

Separately reported items

Both materiality and the nature of the components of income and expense are considered in deciding upon such presentation. Such items may include, inter alia, the financial effect of exceptional items which occur infrequently, such as major restructuring activity (which may require more than one year to complete), significant movement in the Group's deferred tax balances such as was, for example, caused by the impact of US tax reform in 2017, items reported separately for consistency, such as amortisation charges relating to acquired intangible assets, profits or losses arising on the disposal of continuing or discontinued operations and the taxation impact of the aforementioned items reported separately.

The amortisation charge in respect of intangible assets recognised on business combinations is excluded from the trading results of the Group since they are non-cash charges and are not considered reflective of the core trading performance of the Group.

In its adoption of this policy, the Company applies an even-handed approach to both gains and losses and aims to be both consistent and clear in its accounting and disclosure of such items.

1.6 New and revised IFRS

Certain new accounting standards and interpretations have been published that are not mandatory for 30 June 2021 reporting periods and have not been early adopted by the Group. The Group's assessment of the impact of these new standards and interpretations is that they are not expected to have a significant impact on the Group's financial position, performance, cash flows and disclosures.

2 Segment information

Operating segments for continuing operations

The Group's operating segments are determined taking into consideration how the Group's components are reported to the Group's Chief Executive Officer, who makes the key operating decisions and is responsible for allocating resources and assessing performance of the component. Taking into account the Group's management and internal reporting structure, the operating segments are Steel Flow Control, Steel Advanced Refractories, Steel Sensors & Probes and the Foundry Division. The principal activities of each of these segments are described in the Operational Review.

Steel Flow Control, Steel Advanced Refractories and Steel Sensors & Probes operating segments are aggregated into the Steel reportable segment. In determining that aggregation is appropriate, judgement is applied which takes into account the economic characteristics of these operating segments which include a similar nature of products, customers, production processes and margins.

Revenue from contracts with customers
Revenue comprises the fair value of the consideration received or receivable for goods supplied and services rendered to customers after deducting rebates, discounts and value-added taxes, and after eliminating sales within the Group. Revenue from contracts with customers is recognised when control of the goods or services are transferred to the customer, upon the completion of specified performance obligations, at an amount that reflects the considerations to which the Group expects to be entitled to in exchange for these consumable products and associated services.

The revenue recognition policy applicable to the current and comparative periods and information about the Group's performance obligations was disclosed in Note 5 of the 2020 Annual Report and Financial Statements.

Segmental analysis
The reportable segment results from continuing operations are presented below.

	Unaudited Half Year 2021					
	Flow Control	Advanced Refractories	Digital Services (Sensors & Probes)	**Steel**	**Foundry**	**Continuing operations**
				£m	**£m**	**£m**
Segment revenue	315.5	238.6	16.2	570.3	237.8	808.1
at a point in time				*567.4*	*237.8*	*805.2*
Over time				*2.9*	*-*	*2.9*
Segment adjusted EBITDA *				66.0	31.8	97.8
Segment depreciation				(16.6)	(7.9)	(24.5)
Segment trading profit				49.4	23.9	73.3
Return on sales margin				*8.7%*	*10.1%*	*9.1%*
Amortisation of acquired intangible assets						(4.8)
Operating profit						68.5
Net finance costs						(3.6)
Share of post-tax profit of joint ventures						0.6
Profit before tax						65.5
Capital expenditure additions				16.1	4.5	20.6

2 Segment information (continued)

	Unaudited Half Year 2020					
	Flow Control	Advanced Refractories	Digital Services (Sensors & Probes)	**Steel**	**Foundry**	**Continuing operations**
				£m	**£m**	**£m**
Segment revenue	274.4	228.8	13.1	*516.3*	*203.7*	*720.0*
at a point in time				*512.4*	*203.7*	*716.1*
Over time				*3.9*	*-*	*3.9*
Segment adjusted EBITDA *				56.1	20.4	76.5
Segment depreciation				(17.2)	(8.2)	(25.4)
Segment trading profit				38.9	12.2	51.1
Return on sales margin				*7.5%*	*6.0%*	*7.1%*
Amortisation of acquired intangible assets						(5.0)
Restructuring charges						(2.5)
Vacant site remediation costs						(3.8)
Operating profit						39.8
Net finance costs						(5.9)
Share of post-tax profit of joint ventures						0.7
Profit before tax						34.6
Capital expenditure additions				22.5	3.7	26.2

	Full Year 2020					
	Flow Control	Advanced Refractories	Sensors & Probes	**Steel**	**Foundry**	**Total**
				£m	**£m**	**£m**
Segment revenue	561.3	458.6	25.5	**1,045.4**	**412.9**	**1,458.3**
at a point in time				**1,035.7**	**412.9**	**1,448.6**
Over time				**9.7**	**-**	**9.7**
Segment adjusted EBITDA *				**110.6**	**41.4**	**152.0**
Segment depreciation				**(34.2)**	**(16.4)**	**(50.6)**
Segment trading profit				**76.4**	**25.0**	**101.4**
Return on sales margin				*7.3%*	*6.1%*	*7.0%*
Amortisation of acquired intangible assets						**(9.9)**
Restructuring charges						**(6.1)**
Vacant site remediation costs						**(10.3)**
GMP equalisation charge						**(0.8)**
Operating profit						**74.3**
Net finance costs						**(10.9)**
Share of post-tax profit of joint ventures						**1.1**
Profit before tax						**64.5**
Capital expenditure additions				**45.9**	**13.1**	**59.0**

* Adjusted EBITDA is defined in note 16.13

3 Restructuring charges

There are no charges for previously announced restructuring programmes (2020 half year: £2.5m, 2020 full year: £6.1m). The previous charges reflected redundancy costs (2020 half year: £1.0m, 2020 full year: £2.7m), plant closure costs (2020 half year: £1.0m, 2020 full year: £1.8m), asset write-offs: (2020 half year: £nil, 2020 full year: £1.5m), and consultancy fees & travel (2020 half year: £0.5m, 2020 full year: £0.1m).

In respect of these programmes a cash outflow of £3.0m (2020: half year £9.2m; 2020 full year £16.7m) (Note 9) was incurred in H1 2021 leaving provisions made, but unspent, of £6.0m (Note 14) as at 30 June 2021 (2020 half year: £13.4m; 2020 full year: £9.2m).

4 Net finance costs

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Interest payable on borrowings			
Loans, overdrafts and factoring arrangements	**5.0**	7.2	15.6
Interest on lease liabilities	**0.7**	0.9	1.8
Amortisation of capitalised borrowing costs	**0.1**	0.3	0.5
Total interest payable on borrowings	**5.8**	8.4	17.9
Interest on net retirement benefits obligations	**(0.1)**	(0.1)	(0.1)
Adjustments to discounts on provisions and other liabilities	**0.4**	0.5	1.0
Adjustments to discounts on receivables	**(0.2)**	(0.4)	(0.5)
Finance income	**(2.3)**	(2.5)	(7.4)
Total net finance costs	**3.6**	5.9	10.9

Within the table above, total finance costs are £6.2m (2020 half year: £8.9m, 2020 full year: £18.8m) and total finance income is £2.6m (2020 half year: £3.0m, 2020 full year: £7.9m).

5 Income tax

A key measure of the Group's tax burden is the effective tax rate, which the Group calculates on the income tax associated with headline performance, divided by the headline profit before tax excluding the Group's share of post-tax profit of joint ventures. The Group's effective tax rate was in-line with expectations at 26.5% in H1 2021 (2020: half year 27.2%; full year 26.9%) based on the income tax costs associated with headline performance of £18.5m (2020: half year £12.3m; full year £24.4m).

The Group's total income tax costs include a debit of £0.7m (2020 half year: £2.6m credit; 2020 full year: £5.7m credit) relating to separately reported items comprising a debit of £0.7m (2020 half year: £1.1m credit; 2020 full year £2.3m credit) relating to the net movement on intangible assets constituting amortisation of intangible assets (£1.1m credit) and a deferred tax restatement (£1.8m debit) relating to the increase of the UK corporate tax rate from 19% to 25% which was substantively enacted on 24 May 2021.

In previous periods there was a credit related to restructuring charges (2020 half year: £1.5m; 2020 full year £1.1m) and a credit related to vacant site remediation costs (2020: half year £nil; full year £2.3m).

The net income tax debit reflected in the Condensed Group Statement of Comprehensive Income amounted to £9.6m (2020 half year: £5.6m debit; 2020 full year: £3.2m debit), comprising the following:

- a debit of £9.6m (2020: half year £5.6m debit; full year £2.8m debit) constituting a debit of £2.9m on net pension actuarial gains and a further debit of £6.7m relating to the increase of the UK corporate tax rate from 19% to 25% which was substantively enacted on 24 May 2021 ; and
- a debit of £nil on losses on the employee benefits plan (2020: half year £nil; full year £0.4m debit) related to other temporary timing differences.

6 Earnings per share ("EPS")

6.1 Earnings for EPS

Basic and diluted EPS from continuing operations are based upon the profit attributable to owners of the parent, as reported in the Condensed Group Income Statement. The table below reconciles these different profit measures.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Profit attributable to owners of the parent	**43.0**	22.6	41.3
Adjustments for separately reported items:			
Amortisation of intangible assets	**4.8**	5.0	9.9
Restructuring charges	**-**	2.5	6.1
Vacant site remediation costs	**-**	3.8	10.3
GMP equalisation charge	**-**	-	0.8
Income tax credit	**0.7**	(2.6)	(5.7)
Headline profit attributable to owners of the parent	**48.5**	31.3	62.7

6.2 Weighted average number of shares

	Unaudited Half year 2021 millions	Unaudited Half year 2020 millions	Full year 2020 millions
For calculating basic and headline EPS	**270.4**	269.8	269.9
Adjustment for potentially dilutive ordinary shares	**1.5**	1.6	1.7
For calculating diluted and diluted headline EPS	**271.9**	271.4	271.6

For the purposes of calculating diluted and diluted headline EPS, the weighted average number of ordinary shares is adjusted to include the weighted average number of ordinary shares that would be issued were all outstanding share options to vest in full, relating to the Company's share-based payment plans. Potential ordinary shares are only treated as dilutive when their conversion to ordinary shares would decrease EPS or increase loss per share.

6.3 Per share amounts

	Unaudited Half year 2021 pence	Unaudited Half year 2020 pence	Full year 2020 pence
Earnings per share - basic	**15.9**	8.4	15.3
- headline	**17.9**	11.6	23.2
- diluted	**15.8**	8.3	15.2
- diluted headline	**17.8**	11.5	23.1

7 Dividends

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Amounts recognised as dividends and paid to equity shareholders during the period			
Interim dividend for the year-ended 31 December 2020 of 3.1p per ordinary share	**-**	-	8.4
Final dividend for the year-ended 31 December 2020 of 14.3p per ordinary share	**38.7**	-	-
	38.7	-	8.4

The Directors have declared an interim dividend of 6.2p in respect of the year-ending 31 December 2021.

8 Reconciliation of movement in net debt

	Balance as at 1 Jan 2021 £m	Foreign exchange adjustments £m	Fair value gains/ (losses)	Non-cash movements* £m	Cash flow £m	Balance as at 30 June 2021 £m
Cash and cash equivalents						
Cash at bank and in hand	**169.7**	**(4.1)**	**-**	**-**	**(3.6)**	**162.0**
Short term deposits	**40.0**	**-**	**-**	**-**	**(40.0)**	**-**
Bank overdrafts	**(2.9)**	**0.1**	**-**	**-**	**(1.2)**	**(4.0)**
	206.8	**(4.0)**			**(44.8)**	**158.0**
Borrowings, excluding bank overdrafts	**(376.5)**	**9.6**	**-**	**(6.4)**	**22.5**	**(350.8)**
Capitalised borrowing costs	**1.4**	**-**	**-**	**(0.1)**	**-**	**1.3**
Derivative financial instruments	**(6.8)**	**-**	**1.7**	**-**	**-**	**(5.1)**
Net debt	**(175.1)**	**5.6**	**1.7**	**(6.5)**	**(22.3)**	**(196.6)**

* £6.4m (2020 half year: £7.5m) of new leases were entered into during the year.

Net debt is a measure of the Group's net indebtedness to banks and other external financial institutions and comprises the total of cash and short-term deposits, current and non-current interest-bearing borrowings and derivative financial instruments.

9 Cash Generated from Operations

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m
Operating profit	**68.5**	39.8
Adjustments for:		
Amortisation of intangible assets	**4.8**	5.0
Restructuring charges	**-**	2.5
Vacant site remediation costs	**-**	3.8
Trading Profit	**73.3**	51.1
Loss on disposal of non-current assets	**0.2**	1.2
Depreciation	**24.5**	25.4
Defined benefit retirement plans net charge	**3.3**	3.1
Net (increase) in inventories	**(53.3)**	(3.7)
Net (increase)/decrease in trade receivables	**(43.1)**	26.6
Net increase/(decrease) in trade payables	**45.3**	(15.1)
Net decrease in other working capital	**8.7**	4.7
Outflow related to restructuring charges	**(3.0)**	(9.2)
Defined benefit retirement plans cash outflows	**(4.0)**	(3.7)
Vacant site remediation costs paid	**(1.7)**	(1.2)
Cash generated from operations	**50.2**	79.2

	Full year 2020 £m
Operating profit	74.3
Adjustments for:	
Amortisation of intangible assets	9.9
Restructuring charges	6.1
Vacant site remediation costs	10.3
GMP equalisation charge	0.8
Trading Profit	101.4
Loss on disposal of non-current assets	1.3
Depreciation	50.6
Defined benefit retirement plans net charge	6.7
Net decrease in inventories	21.7
Net decrease in trade receivables	3.4
Net increase in trade payables	12.4
Net decrease in other working capital	23.8
Outflow related to restructuring charges	(16.7)
Defined benefit retirement plans cash outflows	(9.0)
Vacant site remediation costs paid	(1.9)
Cash generated from operations	193.7

10 Employee benefits

The net employee benefits asset as at 30 June 2021 was £10.9m (2020 half year: £0.2m asset; 2020 full year: £2.1m liability) derived from an actuarial valuation of the Group's defined benefit pension and other post-retirement obligations as at that date.

The improvement in the balance sheet position has been driven primarily by an increase in bond yields resulting in a reduction in the value of German and US liabilities. As disclosed in note 26 of the 2020 Annual Report and Financial Statements, the above amounts may materially change in the next 12 months if there is a change in assumptions.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Employee benefits — net surpluses			
UK defined benefit pension plans	**112.6**	115.1	116.4
ROW defined benefit pension plans	**0.6**	1.2	0.7
Net surpluses	**113.2**	116.3	117.1
Employee benefits — net liabilities			
UK defined benefit pension plans	**(1.7)**	(1.8)	(1.8)
US defined benefit pension plans	**(20.6)**	(32.4)	(25.9)
Germany defined benefit pension plans	**(53.4)**	(55.1)	(63.1)
ROW defined benefit pension plans	**(19.9)**	(19.7)	(21.4)
Other post-retirement benefit plans	**(6.7)**	(7.1)	(7.0)
Net liabilities	**(102.3)**	(116.1)	(119.2)
Net assets/(liabilities)	**10.9**	0.2	(2.1)

The expense recognised in the Condensed Group Income Statement in respect of the Group's defined benefit retirement plans and other post-retirement benefit plans is shown below.

		Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
In arriving at trading profit (as defined in Note 16.4)	— within manufacturing costs	**0.9**	0.9	1.7
	— within administration, selling and distribution costs	**2.4**	2.2	5.0
In arriving at profit before tax	— GMP equalisation charge	**-**	-	0.8
	— within net finance costs	**(0.1)**	-	(0.1)
Total net charge		**3.2**	3.1	7.4

As set out in Note 26 of the 2020 Annual Report and Financial Statements, a GMP equalisation expense of £0.8m was recognised in 2020 and was separately reported, following issuance of a second UK High Court GMP equalisation ruling on 20 November 2020.

11 Contingent liabilities

Guarantees given by the Group under property leases of disposed operations amounted to £nil (2020 half year: £0.1m; full year £nil).

Vesuvius has extensive international operations and is subject to various legal and regulatory regimes, including those covering taxation and environmental matters.

Certain of Vesuvius' subsidiaries are subject to legacy matter lawsuits, predominantly in the US, relating to a small number of products containing asbestos manufactured prior to the acquisition of those subsidiaries by Vesuvius. These suits usually also name many other product manufacturers. To date, Vesuvius is not aware of there being any liability verdicts against any of these subsidiaries. Each year a number of these lawsuits are withdrawn, dismissed or settled. The amount paid, including costs, in relation to this litigation has not had a material adverse effect on Vesuvius' financial position or results of operations.

As the settlement of many of the obligations for which reserve is made is subject to legal or other regulatory process, the timing and amount of the associated outflows is subject to some uncertainty (see Note 30 of the 2020 Annual Report and Financial Statements for further information).The amount paid, including costs in relation to this litigation, has not had a material effect on Vesuvius' financial position or results of operations in the current period.

12 Related parties

The nature of related party transactions in H1 2021 are in line with those transactions disclosed in Note 34 of the 2020 Annual Report and Financial Statements. All transactions with related parties are conducted on an arm's length basis and in accordance with normal business terms. Transactions with joint ventures and associates are consistent with those disclosed in Note 33 of the 2020 Annual Report and Financial Statements. Transactions between related parties that are Group subsidiaries are eliminated on consolidation.

Transactions with joint ventures and associates	**Unaudited Half year 2021 £m**	Unaudited Half year 2020 £m
Sales to joint ventures	**2.0**	1.6
Purchases from joint ventures	**14.2**	11.0
Purchases from associates	**-**	0.1
Dividends received from joint ventures	**1.0**	1.4
Injection of equity funding	**-**	-
Trade payables owed to joint ventures	**7.4**	6.9
Trade receivables owed by joint ventures	**0.9**	0.6

13 Acquisitions and divestments

There were no acquisitions or divestments in the period.

14 Provisions

	Disposal, closure and environmental costs £m	Restructuring charges £m	Other £m	Total £m
As at 1 January 2021	**42.2**	**9.2**	**5.4**	**56.8**
Exchange adjustments	(0.6)	(0.2)	(0.1)	**(0.9)**
Charge to Condensed Group Income Statement	0.7	-	5.0	**5.7**
Adjustment to discount	0.4	-	-	**0.4**
Cash spend	(4.0)	(3.0)	(5.4)	**(12.4)**
As at 30 June 2021	**38.7**	**6.0**	**4.9**	**49.6**

In assessing the probable costs and realisation certainty of provisions, or related assets, reasonable assumptions are made. Changes to the assumptions used could significantly alter the Directors' assessment of the value, timing or certainty of the costs or related amounts. The nature of the provisions held remains consistent with those held at 31 December 2020 and further description is set out within note 30 of the 2020 Annual Report and Financial Statements.

15 Financial instruments

The Company's financial assets are measured at amortised cost with the exception of certain investments in debt, which are measured at fair value through other comprehensive income. Financial liabilities are measured at amortised cost with the exception of certain derivative instruments, which are measured at fair value through profit and loss.

IFRS 13 Fair Value Measurement requires classification of financial instruments within a hierarchy that prioritises the inputs to fair value measurement. The three levels of the fair value hierarchy are:

Level 1 – Unadjusted quoted prices in active markets for identical assets or liabilities;
Level 2 – Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly;
Level 3 – Inputs that are not based on observable market data.

The following table summarises Vesuvius' financial instruments measured at fair value, and shows the level within the fair value hierarchy in which the financial instruments have been classified:

	Unaudited Half year 2021		Unaudited Half year 2020		Full year 2020	
	Assets £m	**Liabilities £m**	Assets £m	Liabilities £m	Assets £m	Liabilities £m
Investments (Level 2)	**0.9**	**-**	1.1	-	0.7	-
Derivatives not designated for hedge accounting purposes (Level 2)	**-**	**(0.1)**	-	(0.1)	0.2	-
Derivatives designated for hedge accounting purposes (Level 2)	**-**	**(5.0)**	-	(0.6)	-	(7.0)

15 Financial instruments (continued)

All of the derivative financial instruments not designated for hedge accounting purposes reported in the table above will mature within a year of the balance sheet date. There were no transfers between fair value hierarchies during the period. The method for determining the hierarchy and for valuing the financial instruments is consistent with that used at year-end, as disclosed in Note 25 of the 2020 Annual Report and Financial Statements. Fair value disclosures have not been made in respect of other financial assets and liabilities on the basis that the carrying amount is deemed to be a reasonable approximation of fair value.

The Group's Treasury department, acting in accordance with policies approved by the Board, is principally responsible for managing the financial risks faced by the Group. The Group's activities expose it to a variety of financial risks, the most significant of which are market risk and liquidity risk. The condensed interim financial statements do not include all financial risk management information and disclosures required in the annual financial statements; they should be read in conjunction with the Group's 2020 Annual Report and Financial Statements, in which further details of these financial risks were disclosed in Note 25. There have been no changes in the risk management policies since year end.

In June 2020 the Group executed a $86m Cross currency interest rate swap ('CCIRS') with 3 of its relationship banks. The effect of this is to convert the $86m Private Placement Notes issued in June 2020 into €76.6m. The timing and amount of the US Dollar cashflows under the CCIRS exactly mirror those of the Private Placement Notes and the maturity date of the CCIRS also matches the repayment date of the Notes. The CCIRS would by default be revalued through the Income Statement; however as it is in a designated hedging relationship it is instead revalued through Other Comprehensive Income. More specifically, the US Dollar exposure is designated as a cashflow hedge of the underlying Private Placement Notes and the Euro exposure is designated as a net investment hedge of part of the Group's foreign operations. The CCIRS is presented as a non-current asset or liability as it is expected to be settled more than 12 months after the end of the reporting period.

With the exception of the CCIRS the fair value of Derivatives outstanding at 30 June 2021 has been booked through the Income Statement. All of the fair values shown in the table above are classified under IFRS 13 as Level 2 measurements which have been calculated using quoted prices from active markets, where similar contracts are traded and the quotes reflect actual transactions in similar instruments. All of the derivative assets and liabilities not designated for hedge accounting purposes reported in the table above will mature within a year of the balance sheet date.

The cross -currency interest rate swaps are fair valued at each reporting date and the Group applies hedge accounting in accordance with IFRS 9 such that the movement in fair value is accounted for directly within equity. The US$ component is designated as a cashflow hedge of the $86m US Private Placement Notes. The Euro component is designated as a net investment hedge of the Group's Euro denominated net assets.

As at 30 June 2021, €206m and $60m of borrowings were designated as hedges of net investments in €206m and $60m worth of overseas foreign operations. In addition, the €76.6m CCIRS liability has been designated as a net investment hedge of a further €76.6m worth of overseas foreign operations.

As the value of the borrowings and the CCIRS liability exactly matches the designated hedged portion of the net investments, the relevant hedge ratio is 1:1. The net investment hedges are therefore 100% effective with no ineffectiveness. It is noted that hedge ineffectiveness would arise in the event there were insufficient euro-denominated overseas foreign operations to be matched against the €76.6m CCIRS liability.

15 Financial instruments (continued)

As at 30 June 2021, the Group had $146m and €180m (£260.0m in total) of US Private Placement Loan Notes (USPP) outstanding, which carry a fixed rate of interest, representing 81% of the Group's total borrowings outstanding at that date. Maturities of the corresponding USPP Notes were disclosed in Note 25 to the 2020 Annual Report and Financial Statements. The Group also had £14.0m and €26.0m (£36.3m in total) drawn down under its syndicated bank facility, a bi-lateral bank facility of £19.0m and overdrafts of £4.1m, all of which carry a floating rate of interest.

On 5 July 2021, the Group entered a new syndicated bank facility for £385.0m. On the same date the previous syndicated bank facility for £300.0m was cancelled. The new facility expires in July 2025 subject to a one-year extension option exercisable in 2022 at the discretion of the Group and of the lending banks. On 5 July 2021 the Group replaced its £14.0m and €26.0m drawdowns under the previous facility with equivalent short-term drawdowns under the new facility. Drawdowns under the new facility reference SONIA for GBP drawdowns and EURIBOR for EUR drawdowns.

The currency and interest rate profile of the Group's borrowings is detailed in the tables below.

	Financial liabilities (gross borrowings)		
	Fixed rate	Floating rate	Total
	£m	£m	£m
Sterling	**-**	**36.4**	**36.4**
United States dollar	**105.6**	**0.1**	**105.7**
Euro	**154.4**	**22.7**	**177.1**
Other	**-**	**0.2**	**0.2**
Capitalised costs	**(1.3)**	**-**	**(1.3)**
As at 30 June 2021	**258.7**	**59.4**	**318.1**
Sterling	-	43.3	43.3
United States dollar	106.8	0.3	107.1
Euro	160.8	31.5	192.3
Other	-	0.5	0.5
Capitalised costs	(1.3)	(0.1)	(1.4)
As at 31 December 2020	266.3	75.5	341.8

The maturity analysis of the Group's financial liabilities is shown in the tables below. The cash flows shown are undiscounted.

As at 30 June 2021	Within one year	Between 1-2 years	Between 2-5 years	Over 5 years	Total contractual cash flows	Carrying amount
	£m	£m	£m	£m	£m	£m
Trade payables	**227.4**	**-**	**-**	**-**	**227.4**	**227.4**
Loans & overdrafts	**81.1**	**8.5**	**98.8**	**178.4**	**366.8**	**319.4**
Finance lease liabilities	**9.4**	**9.0**	**10.7**	**13.7**	**42.8**	**35.4**
Capitalised arrangement fees	**-**	**-**	**-**	**-**	**-**	**(1.3)**
Derivative liability	**0.4**	**0.5**	**(1.3)**	**(0.9)**	**(1.3)**	**(5.1)**
Total financial liabilities	**318.3**	**18.0**	**108.2**	**191.2**	**635.7**	**575.8**

15 Financial instruments (continued)

As at 31 December 2020	Within one year	Between 1-2 years	Between 2-5 years	Over 5 years	Total contractual cash flows	Carrying amount
	£m	£m	£m	£m	£m	£m
Trade payables	185.7	-	-	-	185.7	185.7
Loans & overdrafts	44.7	84.2	80.5	187.4	396.8	343.2
Finance leases	11.2	9.1	11.1	12.9	44.3	36.3
Capitalised arrangement fees	-	-	-	-	-	(1.4)
Derivative liability	(0.5)	(0.4)	2.7	1.4	3.2	7.0
Total financial liabilities	241.1	92.9	94.3	201.7	630.0	570.8

At 30 June 2021 the Group had a £14.0m drawdown under its previous syndicated bank facility and a £19.0m drawdown under a bi-lateral bank facility. Both of these arrangements referenced GBP LIBOR and had not transitioned to SONIA or an alternative interest rate benchmark. As noted above, the syndicated bank facility was replaced on 5 July 2021 and the replacement facility references SONIA for GBP drawdowns. The £19.0m bi-lateral bank facility matures in October 2021, prior to the termination of GBP LIBOR. It is anticipated that any replacement bi-lateral bank facility will reference SONIA. Following repayment and termination of the previous syndicated bank facility on 5 July 2021 and the maturity of the bi-lateral bank facility in October 2021 there will be no borrowing or hedging arrangements that reference GBP LIBOR.

16 Alternative performance measures (unreviewed)

The Company uses a number of Alternative Performance Measures (APMs) in addition to those reported in accordance with IFRS. The Directors believe that these APMs, listed below, are important when assessing the underlying financial and operating performance of the Group and its Divisions, providing management with key insights and metrics in support of the ongoing management of the Group's performance and cash flow. A number of these align with KPI's and other key metrics used in the business and therefore are considered useful to also disclose to the users of the financial statements. The following APMs do not have standardised meaning prescribed by IFRS and therefore may not be directly comparable to similar measures presented by other companies.

16.1 Headline performance

Headline performance, reported separately on the face of the Condensed Group Income Statement, is from continuing operations and before items reported separately on the face of the Condensed Group Income Statement.

16.2 Underlying revenue, underlying trading profit and underlying return on sales

Underlying revenue, underlying trading profit and underlying return on sales are the headline equivalents of these measures after adjustments to exclude the effects of changes in exchange rates, business acquisitions and disposals. Reconciliations of underlying revenue and underlying trading profit can be found in the Financial Summary. Underlying revenue growth is one of the Group's key performance indicators and provides an important measure of organic growth of Group businesses between reporting periods, by eliminating the impact of exchange rates, acquisitions, disposals and significant business closures.

16.3 Return on Sales ('ROS')

ROS is calculated as trading profit divided by revenue. It is one of the Group's key performance indicators and is used to assess the trading performance of Group businesses. A reconciliation of ROS is included in Note 2.

16.4 Trading profit/adjusted EBITA

Trading profit/adjusted EBITA is defined as operating profit before separately reported items. It is one of the Group's key performance indicators and is used to assess the trading performance of Group businesses. It is also used as one of the targets against which the annual bonuses of certain employees are measured.

16.5 Headline profit before tax

Headline profit before tax is calculated as the net total of trading profit, plus the Group's share of post-tax profit of joint ventures and total net finance costs associated with headline performance. It is one of the Group's key performance indicators and is used to assess the financial performance of the Group as a whole.

16.6 Effective tax rate ('ETR')

The Group's ETR is calculated on the income tax costs associated with headline performance, divided by headline profit before tax and before the Group's share of post-tax profit of joint ventures.

16.7 Headline earnings

Headline earnings is profit after tax before separately reported items attributable to owners of the parent.

16.8 Headline earnings per share

Headline earnings per share is calculated by dividing headline profit before tax less associated income tax costs, attributable to owners of the parent by the weighted average number of ordinary shares in issue during the year. It is one of the Group's key performance indicators and is used to assess the underlying earnings performance of the Group as a whole. It is also used as one of the targets against which the annual bonuses of certain employees are measured. Headline earnings per share is disclosed in Note 6.

16 Alternative performance measures (unreviewed) (continued)

16.9 Adjusted operating cash flow

Adjusted operating cash flow is cash generated from continuing operations before restructuring but after deducting capital expenditure net of asset disposals. It is used in calculating the Group's cash conversion.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Cash generated from continuing operations	**50.2**	79.2	193.7
Add: Outflows relating to restructuring charges	**3.0**	9.2	16.7
Add: Vacant site remediation costs paid	**1.7**	1.2	1.9
Less: Capital expenditure	**(17.6)**	(19.4)	(40.5)
Add: Proceeds from the sale of property, plant and equipment	**0.6**	-	1.1
Adjusted operating cash flow	**37.9**	70.2	172.9
Trading Profit	**73.3**	51.1	101.4
Cash Conversion	**52%**	137%	171%

16.10 Cash conversion

Cash conversion is calculated as adjusted operating cash flow divided by trading profit. It is useful for measuring the rate at which cash is generated from trading profit. It is also used as one of the targets against which the annual bonuses of certain employees are measured.

16.11 Free cash flow

Free cash flow is defined as net cash flow from operating activities after net outlays for the purchase and sale of property, plant and equipment, dividends from joint ventures and dividends paid to non-controlling shareholders. It is one of the Group's key performance indicators and is used to assess the underlying cash generation of the Group and is one of the measures used in monitoring the Group's capital. A reconciliation of free cash flow is included underneath the Condensed Group Statement of Cash Flows.

16.12 Average trade working capital to sales ratio

The average trade working capital to sales ratio is calculated as the percentage of average trade working capital balances to the total revenue for the previous 12 months, at constant currency. Average trade working capital (comprising inventories, trade receivables and trade payables) is calculated as the average of the 13 previous month-end balances. It is one of the Group's key performance indicators and is useful for measuring the level of working capital used in the business and is one of the measures used in monitoring the Group's capital.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Average trade working capital	**314.2**	373.8	337.8
Last 12 months total revenue	**1,515.6**	1,519.8	1,458.3
Average trade working capital to sales ratio	**20.7%**	24.6%	23.2%

16 Alternative performance measures (unreviewed) (continued)

16.13 Adjusted earnings before interest, tax, depreciation and amortisation (adjusted EBITDA)

Adjusted EBITDA is calculated as the total of trading profit before depreciation and amortisation of non-acquired intangibles. It is used in the calculation of the Group's interest cover and net debt to EBITDA ratios. A reconciliation of EBITDA is included in Note 2.

16.14 Net interest payable on borrowings

Net interest payable on borrowings is calculated as total interest payable on borrowings less finance income, excluding interest on net retirement benefit obligations, adjustments to discounts and any item separately reported. It is used in the calculation of the Group's interest cover ratio.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Total interest payable on borrowings (note 4)	**5.8**	8.4	17.9
Finance income (note 4)	**(2.3)**	(2.5)	(7.4)
Net interest payable on borrowings	**3.5**	5.9	10.5

16.15 Interest cover

Interest cover is the ratio of adjusted EBITDA for the last 12 months to net interest for the last 12 months. It is one of the Group's key performance indicators and is used to assess the financial position of the Group and its ability to fund future growth. This measure is also a component of the Group's covenant calculations.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Last 12 months adjusted EBITDA	**173.3**	183.8	152.0
Last 12 months net interest payable on borrowings	**8.1**	10.2	10.5
Interest cover	**21.4x**	18.0x	14.5x

16.16 Net debt

Net debt comprises the net total of current and non-current interest-bearing borrowings (including IFRS16 lease liabilities), cash and short-term deposits and derivative financial instruments. Net debt is a measure of the Group's net indebtedness to banks and other external financial institutions. A reconciliation of the movement in net debt is included in Note 8.

16.17 Net debt to adjusted EBITDA

Net debt to EBITDA is the ratio of net debt at the period-end to EBITDA for the last 12 months. It is one of the Group's key performance indicators and is used to assess the financial position of the Group and its ability to fund future growth and is one of the measures used in monitoring the Group's capital.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Net debt (note 8)	**196.6**	229.7	175.1
Last 12 months adjusted EBITDA (note 2)	**173.3**	183.8	152.0
Net debt to adjusted EBITDA	**1.1x**	1.2x	1.2x

16 Alternative performance measures (unreviewed) (continued)

16.18 Return on net assets ('RONA')

RONA is calculated as trading profit plus share of post-tax profit of joint ventures for the previous 12 months, divided by average net operating assets, at constant currency (being the average over the previous 13 months of property, plant and equipment, trade working capital, interests in joint ventures and associates, investments, other operating receivables, payables and provisions). It is one of the Group's key performance indicators and is used to assess the financial performance and asset management of the Group and is one of the measures used in monitoring the Group's capital.

	Unaudited Half year 2021 £m	Unaudited Half year 2020 £m	Full year 2020 £m
Average net operating assets	**602.5**	672.8	642.0
Trading profit	**120.7**	130.5	101.4
Share of post-tax profit from joint ventures	**1.1**	1.1	1.1
	121.8	131.6	102.5
RONA	**20.2%**	19.6%	16.0%

16.19 Constant currency

Figures presented at constant currency represent 2020 amounts retranslated at average 2021 exchange rates.

16.20 Last twelve months ('LTM')

Some results are presented or calculated using data from the last twelve months from the reference date.

17 Exchange rates (unreviewed)

The Group reports its results in pounds sterling. A substantial portion of the Group's revenue and profits are denominated in currencies other than pounds sterling. It is the Group's policy to translate the income statements and cash flow statements of its overseas operations into pounds sterling using average exchange rates for the year reported (except when the use of average rates does not approximate the exchange rate at the date of the transaction, in which case the transaction rate is used) and to translate balance sheets using period end rates. The principal exchange rates used were as follows:

	Income and expense Average rates				
	Half year 2021	**Half year 2020**	**Full year 2020**	**Half year to Half year change**	**Full year to Half year change**
US Dollar	1.39	1.26	1.28	10.3%	8.6%
Euro	1.15	1.14	1.12	0.9%	2.7%
Chinese Renminbi	8.98	8.87	8.85	1.2%	1.5%
Japanese Yen	149.63	136.46	137.01	9.7%	9.2%
Brazilian Real	7.48	6.18	6.61	21.0%	13.2%
Indian Rupee	101.82	93.41	95.1	9.0%	7.1%
South African Rand	20.17	20.94	21.08	-3.7%	-4.3%

	Assets and liabilities Period end rates				
	Half year 2021	**Half year 2020**	**Full year 2020**	**Half year to Half year change**	**Full year to Half year change**
US Dollar	1.38	1.24	1.37	11.3%	0.7%
Euro	1.17	1.10	1.12	6.4%	4.5%
Chinese Renminbi	8.94	8.76	8.89	2.1%	0.6%
Japanese Yen	153.62	133.81	141.16	14.8%	8.8%
Brazilian Real	6.87	6.78	7.1	1.3%	-3.2%
Indian Rupee	102.82	93.66	99.86	9.8%	3.0%
South African Rand	19.73	21.48	20.08	-8.1%	-1.7%