VESUVIUS PLC

2 March 2017

Results for the year ended 31 December 2016

Resilient performance and margin progression

Vesuvius plc, a global leader in molten metal flow engineering, announces its preliminary audited results for the year ended 31 December 2016.

Financial Summary

	2016 (£m)	2015 (£m)	Year-on-year change	Underlying change[1]
Revenue	**1,401**	1,322	+6.0%	-4.0%
Trading Profit[2]	**133.3**	124.0	+7.5%	-1.5%
Return on Sales	***9.5%***	*9.4%*	*+10bps*	*+30bps*
Operating Profit	**92.9**	92.8	+0.1%	
Profit Before Tax	**79.4**	77.4	+2.6%	
Profit	**63.2**	54.0	+17.0%	
Headline Earnings[3]	**82.1**	75.7	+8.5%	
Headline EPS[2] (pence)	**30.4**	28.1	+8.4%	
Operating cash flow	**125.0**	124.4	+0.5%	
Net Debt	**320.3**	291.6	+9.8%	
Dividend	**16.55p**	16.275p	+1.7%	

Key Points

- Resilient performance in 2016, despite broadly flat end markets as anticipated
- Positive effects of restructuring with benefits of £16.6m in 2016, and target savings further increased to £35m by the end of 2017
- Good progress in long-term, structural growth markets – China, India and Brazil
- Strong operating cash flow generation of £125.0m; cash conversion of 93.8%
- Increase in net debt of £28.7m, impacted by foreign exchange and cash restructuring costs
- Our reported revenue and trading profit benefited by 9.3% and 9.8% respectively from the weaker Sterling
- Full year dividend increased 1.7% to 16.55 pence per share. Final dividend of 11.40 pence per share to be paid on 19 May 2017

François Wanecq, Chief Executive of Vesuvius, commented:

"We delivered an encouraging set of results in 2016 in challenging market conditions and made important progress towards our strategic and operating objectives, in particular, growth in return on sales as a result of the restructuring programme. Our resilience reflects the strength of our customer relationships, built on our proven ability to offer innovation, reliability and efficiency."

"Whilst the trading environment remains broadly stable, we have seen early signs of improvement in 2017. Following our cost improvement efforts, we are well positioned to benefit from any recovery in demand and we will continue to focus on creating value for our customers and shareholders alike. We remain confident of making further progress, both in the near and longer term."

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(1) Underlying basis is at constant currency and excludes separately reported items and the impact of acquisitions and disposals
(2) For definitions of alternative performance measures, refer to the notes in the financial statements
(3) Headline results refer to continuing operations and exclude separately reported items

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Vesuvius management will make a presentation to analysts and investors on 2 March 2017 at 09.00am (GMT) at 155 Bishopsgate, London EC2M 3XY. For those unable to attend in person, an audio webcast and conference call will also be available (UK participant dial in +44(0)20 3364 5721; US participant dial in +1 646 254 3362; confirmation code 7676096). This presentation will be broadcast live on Vesuvius' website, http://investors.vesuvius.com/investor-relations and an archive version of the presentation will be available on the website later that day.

About Vesuvius plc

Vesuvius is a global leader in molten metal flow engineering 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 energy consumption. 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

Results for the year ended 31 December 2016

Vesuvius continued to make further strategic and operational progress in 2016, in line with our objectives and strategy. The improvement in our return on sales and underlying business was largely driven by our restructuring programme. We benefited in the year from favourable FX tailwinds given the weaker Sterling, more than offsetting subdued conditions in our key end-markets of steel and foundry. The second half of the year showed continued signs of market stabilisation albeit at low levels.

£m	2016 Reported	Acquisitions / Disposals	2016 Underlying	2015 Reported	Currency	Acquisitions/ Disposals	2015 Underlying	Reported % change	Underlying % change
Revenue	**1,401.4**	**-13.2**	**1,388.2**	1,322.0	130.9	-6.2	1,446.7	+6.0%	-4.0%
Trading Profit	**133.3**	**1.7**	**135.0**	124.0	13.1	-0.1	137.0	+7.5%	-1.5%
Return on sales %	**9.5%**	**-**	**9.8%**	9.4%	-	-	9.5%	+10bps	+30bps

Group trading performance

Group revenue from our continuing operations was £1,401.4m, an increase of 6.0% compared to 2015 on a reported basis. Underlying Group revenue, adjusted for the effects of acquisitions and currency translation, decreased by 4.0%. Trading profit for the year was £133.3m, up 7.5% on a reported basis (2015: £124.0m) and down 1.5% on an underlying basis. Return on sales increased by 10 basis points on a reported basis (30 basis points on an underlying basis) to 9.5% in 2016 (2015: 9.4%).

2016 started slowly, with the steel market continuing to be negatively impacted by Chinese exports and also by a substantial reduction in industrial activity in the US and UK. The situation improved slightly during the year, with tariff measures imposed in the US and, more recently in Europe with worldwide markets signalling a progressively more protectionist approach. Brazilian economic contraction and political instability dominated the already difficult market in South America. Furthermore, the Group saw reduced foundry investment worldwide and reduced demand for foundry castings from the agriculture, construction and mining industries.

Strategic progress

The Board has put in place a clearly defined strategy for profitable growth, and our progress reflects continued execution success against our five stated strategic priorities:

- Reinforcing our technology and innovation leadership positions
    - In 2016, we spent £28.6m on R&D, representing approximately 2% of revenue
- Enlarging our addressable markets through the increasing penetration of existing and new value-creating solutions
    - Our New Product Sales have grown from 8% of revenue in 2014 to 12% in 2015 and 14% in 2016, ahead of our target to double in five years
- Leveraging our strong positions in developing markets to capture the growth opportunities that they represent
    - Increased underlying revenues in key developing markets such as Asia-Pacific, where we enjoy strong positions
- Improving our cost leadership and our margins
    - Further increased our annualised savings target by £5m to £35m by the end of 2017
- Building organically, and through acquisition, an increasingly comprehensive Technical Services offering
    - Significant progress across all product lines including: Accuoptix; SERT and Avemis systems; lasers supporting total refractory management contracts

Foreign Exchange

As announced in October, the Group's results benefited from a foreign exchange tailwind during 2016, with most global currencies strengthening against Sterling between December 2015 and December 2016. In particular, there was a significant movement since June following the EU referendum in the UK. Average exchange rates of Sterling to US Dollar and Euro fell by 11.2% and 11.1%, respectively, between YE 2015 and YE 2016. This currency translation effect has provided a trading profit benefit of approximately £13.1m for the year.

Restructuring

We continue to make good progress with our self-help and restructuring plan. Actions taken this year include the closure of the European Flow Control site plants in Ostrawa in Czech Republic, and Avezzano and Cagliari in Italy.

Since our announcement on 27 October 2016, these and the other restructuring measures have led us to increase our annualised savings target by a further £5m to £35m by the end of 2017 at a cost of £45m (previously £40m).

Board and senior management

As previously announced, we further strengthened our senior management team in the year with a new appointment and an internal promotion. Patrick André assumed the role of President, Flow Control, following Chris Abbot's departure. Alexander Laugier-Werth, previously Vice President, Operations Foundry, was appointed President, Technical Services, following Luis Reyes's move within the Group. In their new roles, Patrick and Alexander joined our Group Executive Committee.

Encouraging progress is being made in the recruitment process to replace Nelda Connors who stepped down from the Board in September 2016 due to the increasing demands of her other responsibilities, having served as a Non-executive Director since March 2013.

Health and safety

Vesuvius places great emphasis on the importance of health and safety in the workplace and in the communities in which we operate. Safety is of paramount importance as our employees often operate in harsh environments. We continue to work hard at reducing incident severity and developing robust standards and practices aimed at improving the safety and health of our people in all that they do. In 2016, our lost time injury frequency rate remained broadly stable at 1.6. We continue to focus our efforts to ensure a safe working environment for our people and the continuous improvement of our group wide safety programmes.

Result of Statutory Audit Tender

As announced at the Half Year Results, following the completion of a formal tender process for the statutory audit, the Board is recommending the appointment of PriceWaterhouseCoopers LLP as external auditor for Vesuvius plc for the year ending 31 December 2017, replacing KPMG LLP. KPMG LLP have audited the Group's accounts for the year ended 31 December 2016. Shareholder approval to confirm the appointment of PriceWaterhouseCoopers LLP will be sought at the Vesuvius plc Annual General Meeting in May 2017.

Dividend

The Board has recommended a final dividend of 11.40 pence per share (2015: 11.125 pence per share), a 2.5% increase on the final dividend paid in 2015. This represents a 1.7% increase to the full year dividend. The Board remains committed to its previously stated policy of delivering long-term dividend growth provided that this is supported by underlying earnings, cash flows and is justified in the context of capital expenditure requirements and the prevailing market outlook. If approved at the Annual General Meeting on 10 May 2017, the final dividend will be paid on 19 May 2017 to shareholders on the register at the close of business on 7 April 2017.

Any shareholder wishing to participate in the Vesuvius Dividend Reinvestment Plan ("DRIP") needs to have submitted their election to do so by 27 April 2017.

Outlook

Whilst the global market environment is broadly stable at relatively low levels, in recent months we have seen some encouraging early signs of improvement. Vesuvius remains well placed to benefit from a recovery in end markets, and we will continue our initiatives to create shareholder value.

We remain confident in our ability to improve trading margins and working capital performance, reduce net debt, and capitalise where there is further growth in our addressable markets in the near and medium-term. We will continue to assess acquisition opportunities where we believe material shareholder value can be created.

Operational Review

Vesuvius comprises two divisions, Steel and Foundry. The Steel division operates as three business lines, Steel Flow Control, Advanced Refractories and Technical Services.

Steel Division

According to the World Steel Association, global steel production in 2016 was stable, showing a small increase of 0.7% compared with the previous year. However, despite this overall stability, there were significant differences within regions, with declining production in Europe, South America and Africa, and increasing steel production in China of 1.2%, India of 7.4% and the Middle East of 7.6%. India was the fastest growing single market in 2016, as it has been for the past several years. It is now the third largest producer in the world, and is catching up with Japan (whose volumes saw a 0.3% decline in 2016). NAFTA steel volumes improved marginally (+0.7%) after a disappointing year in 2015.

Revenue in the Steel division increased by 4.9% on a reported basis, reflecting the benefits of translating revenues into Sterling. Markets with higher penetration of sales per ton of steel, like North America and Europe, were impacted by key customers temporarily or permanently closing sites. On an underlying basis, Steel Division revenue was down 4.8%. This reflects depressed demand in the first half and an improvement in the second half of the year.

Trading profit was impacted in part by the reduction in revenue as noted above as well as an increase of £5.5m in our bad debt provision, mainly due to the financial difficulties of the Chinese steel industry.

Steel Division	**2016 (£m)**	**2015 (£m)**	**Year-on-year change (%)**	**Underlying change (%)**
Total Steel Revenue	**942.0**	897.6	*+4.9*	*-4.8*
Total Steel Trading Profit	**79.2**	79.5	*-0.5*	*-6.6*
Total Steel Return on Sales	**8.4%**	8.9%	*-50bps*	*-20bps*

Steel Flow Control

Steel Flow Control supplies the stoppers and tubes used to channel and control the flow of molten steel from ladle to tundish and from tundish to mould; slide gate refractories for ladles and tundishes; slide gate systems; tundish and mould fluxes; and control devices to monitor and regulate steel flow into the mould. These products have been designed to resist extreme thermomechanical stress and corrosive environments. The majority of these products are consumed during the process of making steel and, consequently, demand is primarily linked to steel production volumes. Continuing innovation allows us to offer enriched solutions that create additional value in our customers' processes.

Steel Flow Control Revenue	**2016 (£m)**	**2015 (£m)**	**Year-on-year change (%)**	**Underlying change (%)**
Americas	**168.5**	166.6	*+1.1*	*-8.1*
Europe, Middle East & Africa (EMEA)	**193.6**	188.3	*+2.8*	*-6.4*
Asia-Pacific	**144.3**	132.3	*+9.0*	*-0.2*
Total	**506.4**	487.3	*+3.9*	*-5.3*

Steel Flow Control reported revenues of £506.4m for 2016, an increase of 3.9% compared with 2015. On an underlying basis, revenues were down 5.3% compared with 2015.

In the Americas, Steel Flow Control's underlying revenues declined 8.1% to £168.5m against a 3.0% reduction in crude steel production volumes. This mostly reflects the closure during the second half of 2015 of customers in the US where Vesuvius had high penetration rates. At the same time, we gained market share in South America despite a difficult market environment. As previously announced, the acquisition of the mould and tundish flux business of Carboox in Brazil, broadened the Steel Flow Control offering in this important regional market for the Group.

In EMEA, underlying revenue was down 6.4% against relatively stable crude steel production. This again reflected the closure in 2015 of high penetration customers, particularly in the UK.

Underlying revenue declined slightly by 0.2% in Asia-Pacific compared to a 1.6% increase in crude steel production volume in the region. Revenues increased faster than the steel market in India, the most dynamic market, where the penetration of our products continues to grow. Revenues increased slightly less than the steel market in China due to the implementation of stricter credit limits on customers.

Advanced Refractories

Products of the Advanced Refractories business line include specialist refractory materials for lining steelmaking vessels such as blast furnaces, ladles and tundishes, which are subject to extreme temperatures, corrosion and abrasion. These materials 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 and dams). Vesuvius is one of the world's largest manufacturers of monolithic refractory linings. Advanced Refractories delivers installation technologies, products adapted to fit customers' processes and effective and efficient logistics services. These factors are combined with significant R&D, a deep knowledge of customers' processes and project management capability to deliver market-leading solutions for customers.

Advanced Refractories Revenue	**2016 (£m)**	**2015 (£m)**	**Year-on-year change (%)**	**Underlying change (%)**
Americas	**132.6**	129.2	*+2.6*	*-7.9*
Europe, Middle East & Africa (EMEA)	**172.2**	164.9	*+4.5*	*-2.2*
Asia-Pacific	**94.0**	84.6	*+11.1*	*+1.7*
Total	**398.8**	378.7	*+5.3*	*-3.3*

Year-on-year, revenue in Advanced Refractories increased 5.3% to £398.8m on a reported basis. Underlying revenue decreased 3.3%, with performance tracking the challenging environment across global markets driven in particular by the excess steel-making capacity in China increasing exports into some of our main markets. Underlying revenue in the mature markets of EMEA and the Americas reflected weak regional steel end markets. In contrast, underlying revenue in Asia-Pacific grew by 1.7%, mostly due to India's continued growth cycle. Underlying revenue in the rest of South East Asia and Oceania declined by 9.3% due to the slow-down experienced in industrial production and ongoing pressure from Chinese imports on steel production in the region.

Technical Services

Technical Services is a new business line for the Group which complements existing product lines with new services to our existing customers. Technical Services focuses on the capture and interpretation of key manufacturing data, complementing Vesuvius' strong presence and expertise in molten metal engineering to create new technologies and integrate them into expert process management systems. Applications include: data acquisition using sensors and laser scanners; slag prevention technology; and caster data acquisition in the tundish and mould, which uses sensors to obtain temperature measurement, metallurgical data and other mould information.

Technical Services Revenue	2016 (£m)	2015 (£m)	Year-on-year change (%)	Underlying change (%)
Americas	**21.8**	22.8	*-4.3*	*-18.7*
Europe, Middle East & Africa (EMEA)	**14.1**	8.3	*+70.3*	*-17.0*
Asia-Pacific	**1.1**	0.6	*+70.9*	*+64.4*
Total	**36.9**	31.7	*+16.4*	*-17.1*

Technical Services generated revenues of £36.9m, an increase of 16.4% year-on-year on a reported basis. On an underlying basis, revenues fell by 17.1% when adjusting for acquisitions. This predominantly reflected headwinds experienced in the steel industry leading to reduced customer activity and significantly lower customer capital expenditure. Performance was also impacted by the poor economic environment in Brazil.

We have made good progress during the course of 2016 with our objective to establish Technical Services as a standalone service, as distinct from our other business units. However, it is also important to recognise that the sale of Technical Services products takes place to a significant extent through the existing Steel Flow Control and Advanced Refractory sales forces, generating sales which are not captured in Technical Services' reported revenues.

Foundry Division

Vesuvius' Foundry division, trading as Foseco, is a world leader in the supply of consumable products, solutions and associated services related to the foundry industry. The foundry process is highly sequential and is critically dependent on consistency of product quality and productivity optimisation. The Foundry division's products, solutions and use of advanced computer simulation techniques allow foundries to reduce defects and hence reduce labour-intensive fettling and machining, minimise metal usage requirements, influence the metal solidification process and automate moulding and casting, thus reducing cost, energy usage and mould size.

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	2016 (£m)	2015 (£m)	Year-on-year change (%)	Underlying change (%)
Foundry Revenue	**459.4**	424.4	*+8.3*	*-2.5*
Foundry Trading Profit	**54.1**	44.5	*+21.6*	*+7.3*
Foundry Return on Sales	**11.8%**	10.5%	*+130bps*	*+110bps*

Foundry market dynamics in 2016 were consistent with 2015. Production for the agriculture, construction and mining industries remained weak. Demand for foundry castings for extractive industries and related equipment continued at the reduced levels seen in 2015. Worldwide investment in capital equipment was flat, continuing the trends seen last year in major economies such as the US, China and Brazil as well as other key markets such as Indonesia and Australia. However, positive year-on-year growth was achieved in global light vehicle production and global heavy truck production, which increased by 3.9% and 2.5%, respectively, primarily due to increases in NAFTA, India and China.

Foundry Revenue	2016 (£m)	2015 (£m)	Year-on-Year change (%)	Underlying change (%)
Americas	**92.5**	89.7	*+3.1*	*-7.2*
Europe, Middle East & Africa (EMEA)	**205.8**	194.2	*+5.9*	*-4.0*

Asia-Pacific	**161.1**	140.4	*+14.8*	*+2.7*
Total	**459.4**	424.4	*+8.3*	*-2.5*

Year-on-year, revenue in the Foundry division increased 8.3% to £459.4m on a reported basis. Underlying revenue decreased by 2.5% to £459.4m. Despite the decrease in sales, trading profit improved by 7.3% ahead of 2015 on an underlying basis. This reflected the benefit of the early commencement of restructuring initiatives in 2015 as well as market share gains in certain areas.

Underlying revenue in the Americas decreased by 7.2% due to weakness in the agriculture, construction and mining industries, with US production continuing its slow but steady relocation overseas. This was compounded by expected growth in Mexico not occurring due to a reduction of activity in the precious metal industry. Revenues increased in South America, with growth delivered mainly from market share gain and further penetration of the mining sector, despite Brazil experiencing reductions in foundry castings in all sectors.

Underlying revenue in EMEA decreased 4.0% year-on-year, despite increases in light vehicle and heavy truck production, reflecting declines in output from steel foundries supplying mining, construction and petrochemical castings.

In Asia-Pacific, underlying revenue increased by 2.7% to £161.1m. Underlying revenue in India was up 12.4% year-on-year, benefitting from increased light vehicle and truck production.

Financial Review

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

Basis of Preparation

We have continued to adopt a columnar presentation format for our accounts separately identifying headline performance results, as we consider that this gives a better view of the underlying results of the ongoing business.

Headline profit before tax (PBT) and earnings per share (EPS)

Details relating to revenue, trading profit and return on sales are provided in the Financial Summary and Operating Review in this release. Net finance costs in 2016 of £14.5m were £0.9m below 2015. The key changes in 2016 were lower commitment and utilisation fees and lower costs associated with unwinding of discounted provisions. These were partially offset by higher interest on net retirement obligations.

Headline PBT was £119.8m, 10.3% higher than last year on a reported basis. Including amortisation (£17.1m), the exceptional restructuring charges (£28.5m) and an offsetting pension settlement gain (£5.2m), our PBT of £79.4m was 2.6% higher than 2015.

Headline EPS at 30.4p is 8.4% higher than 2015.

Return on Net Operating Assets

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, and trade working capital).

As with most of our KPIs, we measure this on a 12-month moving average basis at constant currency to ensure we focus on sustainable underlying improvements. Our RONA for 2016 was 21.1% (2015: 21.1%).

Free Cash Flow and Working Capital

Trade working capital as a percentage of sales in 2016 was 26.6% (2015: 26.3%), measured on a 12-month moving average basis. In absolute terms on a constant currency basis trade working capital increased by £12.9m, the majority of this increase is attributable to £10.2m of higher inventory that was built up in the last quarter to mitigate against the risk of customer interruptions as negotiations relating to plant closures were taking place. This inventory will be unwound in 2017.

Free cash flow from continuing operations was £61.4m for the year, due in part to ongoing management of capital expenditure which was £6.8m lower than last year. Free cash flow from continuing operations in 2016 was £3.9m lower than last year on a reported basis as a result of higher investment in working capital and cash restructuring costs in 2016. Our cash conversion in 2016 was 93.8%.

Interest Cover and Net Debt

As at 31 December 2016, the Group had committed borrowing facilities of £576.9m (2015: £532.4m), of which £158.3m were undrawn (2015: £181.1m). The accordion option to increase the amount of committed funds by up to £200m either from the existing bank group or by introducing additional banks on the same lending terms was not exercised during 2016 as we have sufficient debt capacity for the short term.

Net debt as at 31 December 2016 was £320.3m, a £28.7m increase over 2015, despite our good cash generation. The main drivers of the increase were the impact of net foreign exchange movements of £30.3m, restructuring costs of £16.8m, and cash acquisition costs of £7.7m primarily related to the acquisition of the mould and tundish flux business of Carboox at the end of the year.

The Group's debt facilities have two financial covenants: the ratios of net debt to EBITDA (maximum three times limit) and EBITDA to interest (minimum four times limit). These ratios are monitored regularly to ensure the Group has sufficient financing available to run the business and fund future growth. At the end of 2016, the net debt to EBITDA ratio was 1.8x, the same as last year and EBITDA to interest was 13.4x (2015: 11.7x).

Restructuring

In 2016 we reported £28.5m of restructuring costs (2015: £14.6m) that were predominantly made up of redundancy and plant closure costs, along with related consulting fees. The cash costs in 2016 were £16.8m (2015: £11.5m) the difference reflecting amounts accrued for redundancy costs in Italy that will be paid out in 2017. We are carrying a restructuring provision forward into 2017 of £18.5m.

Capital Expenditure

Capital expenditure in 2016 of £35.2m (2015: £35.0m) comprised £23.7m in the Steel division (2015: £24.4m) and £11.5m in the Foundry division (2015: £10.6m). The reduction in 2016 was in order to preserve cash and in recognising that a significant cash investment was being made on restructuring during the year. Capital expenditure on revenue generating customer installation assets was £6.5m (2015: £6.2m).

Pensions

The Group has a limited number of historical defined benefit plans mainly in the UK, US, Germany and Belgium. The main plans in the UK and US are largely closed to further benefit accruals and 55% of the liabilities in the UK have already been insured. The total net deficit attributed to these defined benefit obligations at the end of December 2016 was £29.4m (2015: £35.3m), representing an improvement of £5.9m. The key movements giving rise to this were increases of £87.4m to the deficit arising out of changes to actuarial assumptions (mainly reducing discount rates) and £15.2m from exchange rate movements; offset by reductions to the deficit of £93.3m from asset returns, contributions of £8.8m and a combined settlement gain of £5.2m resulting from settlements and curtailments primarily in the US.

The majority of the ongoing pension plans are defined contribution plans, where our only obligation is to make contributions, with no further commitments on the level of post-retirement benefits. During 2016, £10.8m (2015: £10.7m) of contributions were made into the plans and charged to trading profit.

Taxation

The Group's effective tax rate, based on the income tax costs associated with headline performance of £31.4m (2015: £27.7m), was 26.4% in 2016 (2015: 25.5%).

The Group's effective tax rate is sensitive to changes in geographic mix of profits and level of profits and reflects a combination of higher rates in certain jurisdictions such as India, Mexico, Germany and Belgium, nil effective rates in the UK and US due to the availably of unutilised tax losses, and rates that lie somewhere in between.

The Group experienced such a change in mix in 2016, principally as a result of good business performance in India, giving rise to the increase in its effective rate compared to 2015.

The income tax credit on separately reported items of £5.0m (2015: £2.9m) comprises £3.7m non-cash deferred tax movements relating to the amortisation of a deferred tax liability arising from the 2008 acquisition of Foseco plc (2015: £4.7m), £3.8m tax credits relating to restructuring charges (2015: £1.5m), tax charge of £0.4m (2015: nil) on pension curtailment gains, and a net reduction in the deferred tax asset previously recognised in respect of US tax losses and certain other temporary differences of £2.1m (2015: £3.3m).

The net income tax charge recognised directly in the Group statement of comprehensive income of £0.7m (2015: £1.6m credit) comprises a £0.7m charge (2015: £0.9m credit) in respect of deferred tax on pension obligations and £nil (2015: £0.7m credit) in respect of exchange differences.

The Group has released a £9.0m (2015: nil) provision for possible China taxes arising during the demerger of the Alent business in 2012. This followed the publication of additional guidance by the China tax authorities on the taxes applicable to the underlying transaction concerned. This release is included in discontinued operations in the Group income statement.

Going concern

The Directors have prepared cash flow forecasts for the Group for a period in excess of 12 months from the date of approval of the 2016 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 forecasts show that the Group will be able to operate within the current committed debt facilities and show continued compliance with the Company's financial covenants. On the basis of the exercise described above and the Group's available committed debt facilities, the Directors consider that the Group and Company have adequate resources to continue in operational existence for a period of at least 12 months from the date of signing of the 2016 financial statements. Accordingly, they continue to adopt a going concern basis in preparing the financial statements of the Group and the Company.

Principal Risks and Uncertainties

Principal Risks

The Board is responsible for setting the Group's risk appetite and ensuring that appropriate risk management systems are in place. The Group undertakes a continuous process of risk identification and review, which includes both top down and bottom up processes, allowing operational, functional, senior executive and Board members' views on risk to be independently gathered. This year the Board undertook a clean sheet review of the Group's principal risks, to ensure that the Group was clearly communicating those specific key risks that could have the greatest impact on our business. As a result of this process the Group's table of principal risks has been redrawn, with risks recategorised and restructured.

The risks identified below 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 these risks 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. 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.

Risk Mitigation

Once risks are identified by the Group, they are actively managed in order to mitigate exposure and, where cost effective, the risk is transferred to insurers. The senior management 'owners' for each principal risk update the mitigations of that specific risk and contribute to the analysis of likelihood and materiality. This is reported to the Board. We have also built a business structure that gives protection against the 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.

Board Monitoring

The Board defines the Group's risk appetite considering the nature and extent of the principal risks that the Group should take. During 2016, the Board discussed the classification of the Group's risks, considering the range and limits of the risks the Group should adopt. The Board's oversight of principal risks also involved a Board review of the processes by which the Group manages those risks, establishing a clear understanding at Board level of the individuals and groups in the business formally responsible for the management of specific risks.

Changes to Risk in 2016

The Board does not believe that there has been any material change to the Group's risk profile during the year, but believes that the restructured overview of the Group's principal risks will give greater insight and clarity about the risks that are considered most significant for the Group. These risks and uncertainties are summarised below:

Risk and context	**Potential Impact**	**Mitigation**
Demand volatility *Vesuvius' expectations of future trading are based upon an assessment of end-market conditions, which are subject to some uncertainty. Vesuvius' end-markets are historically somewhat cyclical in nature.*	• Unplanned drop in demand and/or revenue due to reduced production • 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 & service offerings securing long term revenue streams and maintaining performance differential • Increase in service and product lines by the development of the Technical Services business • 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 & Globalisation *Pressure from local, national or regional requirements conflict with the quality and efficiency delivered by scale and standardisation.*	• Restricted access to market due to enforced preference of local suppliers • Increased barriers to entry for new business or expansion • Increased costs from import duties or taxation • Loss of market share	• 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
Financial uncertainty *Fluctuations in the value of currencies, interest rates, or rates of inflation may adversely impact the Group's financial position or results of operations. Availability of sufficient capital is critical to allow Vesuvius to deliver its business plan.*	• Customer and other counterparty default • Restricted access to capital hampering ability to fund growth • Reduction in earnings from increased interest charges • Reduced market liquidity and increased cost of capital	• Capital allocation discipline • Capital structuring, including fixed rate borrowing and matching of debt to cash flow earnings currency • Alignment of cost structure with revenue where possible • Effective planning of the debt refinancing profile to avoid exposure to short term market disruptions
Complex and changing regulatory environment *Vesuvius is subject to worldwide legal and regulatory regimes, some of which impose extra-jurisdictional obligations on companies and are continually updated.*	• 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 • Loss 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 of control processes • Disruption of manufacturing processes • Inability to source critical raw materials	• Globally disseminated Code of Conduct highlighting ethical approach to business • Worldwide confidential Speak up procedure • Compliance programmes and training across the Group • Independent Internal audit function • Experienced Internal legal function
Business interruption *The Group is subject to operational risks including natural catastrophe, terrorist action, fire / explosion, environmental regulation, industrial actions, supply chain issues, and cyber risk.*	• Loss 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 of control processes • Disruption of manufacturing processes • Inability to source critical raw materials	• Diversified manufacturing footprint. • Dual sourcing strategy and development of substitutes • 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
Failure to secure Innovation *Not maintaining and/or developing the necessary sustainable differentiation in products, systems and services by driving innovative solutions. Competitive advantage derived from proprietary intellectual property is lost through inadequate protection.*	• 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 & significant investment in R&D, with market leading research • A shared strategy for innovation across the Group, deployed via our R&D centres • Stage gate process from innovation to commercialisation to foster innovation and increase alignment with strategy • Programmes of Manufacturing and Process Excellence • Quality programme, focused on quality and consistency • Stringent intellectual property registration and defence
Attracting & retaining staff *Failure to attract sufficient new talent to the Group based on industry perception and competition. Failure to retain and maintain a talent pipeline and internal succession options, for middle and senior management positions*	• Staff turnover in growing countries and regions • Stagnation of ideas and development opportunities • Loss of expertise and critical business knowledge • Organisational culture is not maintained • Reduced management pipeline for succession to senior positions	• Contacts with universities to identify and develop talent • Internal focus on talent development and training, with tailored career-stage programmes • Career path planning and global opportunities for high potential staff • Internal programmes for the structured transfer of technical and other knowledge • Clearly elucidated values to underpin business culture
Quality, Health & Safety *Vesuvius works in highly challenging manufacturing environments, providing products, systems and services that are mission critical and for which reliability is paramount*	• Product or application failures lead to adverse financial impact or loss of reputation as technology leader • Health & safety breach, manufacturing downtime or damage to infrastructure from incident at customer plant • Customer claims from product quality issues • Injury to staff and contractors	• Active safety programmes, with ongoing wide-ranging monitoring and safety training • 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 department controlling third party contracting

Group Income Statement

For the year ended 31 December 2016

	Notes	2016 Headline performance £m	2016 Separately reported items £m	2016 Total £m	2015 Headline performance £m	2015 Separately reported items £m	2015 Total £m
Continuing operations							
Revenue	2	**1,401.4**	**-**	**1,401.4**	1,322.0	-	1,322.0
Manufacturing costs		**(1,018.6)**	**-**	**(1,018.6)**	(968.9)	-	(968.9)
Administration, selling and distribution costs		**(249.5)**	**-**	**(249.5)**	(229.1)	-	(229.1)
Trading profit	2	**133.3**	**-**	**133.3**	124.0	-	124.0
Amortisation of intangible assets		**-**	**(17.1)**	**(17.1)**	-	(16.6)	(16.6)
Restructuring charges	4	**-**	**(28.5)**	**(28.5)**	-	(14.6)	(14.6)
Gain on employee benefit plan		**-**	**5.2**	**5.2**	-	-	-
Operating profit/(loss)		**133.3**	**(40.4)**	**92.9**	124.0	(31.2)	92.8
Net finance costs	5	**(14.5)**	**-**	**(14.5)**	(15.4)	-	(15.4)
Share of post-tax profit of joint ventures		**1.0**	**-**	**1.0**	-	-	-
Profit/(loss) before tax		**119.8**	**(40.4)**	**79.4**	108.6	(31.2)	77.4
Income tax (costs)/credits	6	**(31.4)**	**5.0**	**(26.4)**	(27.7)	2.9	(24.8)
Profit/(loss) from:							
Continuing operations		**88.4**	**(35.4)**	**53.0**	80.9	(28.3)	52.6
Discontinued operations	15	**-**	**10.2**	**10.2**	-	1.4	1.4
Profit/(loss)		**88.4**	**(25.2)**	**63.2**	80.9	(26.9)	54.0
Profit attributable to:							
Owners of the parent		**82.1**	**(25.2)**	**56.9**	75.7	(26.9)	48.8
Non-controlling interests		**6.3**	**-**	**6.3**	5.2	-	5.2
Profit		**88.4**	**(25.2)**	**63.2**	80.9	(26.9)	54.0
Earnings per share - pence	7						
Continuing operations - basic				**17.3**			17.6
- diluted				**17.3**			17.5
Total operations - basic				**21.1**			18.1
- diluted				**21.0**			18.1

Group Statement of Comprehensive Income

For the year ended 31 December 2016

	2016 £m	2015 £m
Profit	**63.2**	54.0
Items that will not be reclassified subsequently to income statement:		
Remeasurement of defined benefit liabilities/assets	**9.5**	13.0
Income tax relating to items not reclassified	**(0.7)**	1.6
Items that may be reclassified subsequently to income statement:		
Exchange differences on translation of the net assets of foreign operations	**207.7**	(29.3)
Exchange translation differences arising on net investment hedges	**(41.6)**	(6.1)
Other comprehensive income/(loss), net of income tax	**174.9**	(20.8)
Total comprehensive income	**238.1**	33.2
Total comprehensive income attributable to:		
Owners of the parent	**226.2**	28.2
Non-controlling interests	**11.9**	5.0
Total comprehensive income	**238.1**	33.2

Group Statement of Cash Flows

For the year ended 31 December 2016

	Notes	2016 £m	2015 £m
Cash flows from operating activities			
Cash generated from operations	10	**130.2**	140.0
Net interest paid		**(12.1)**	(13.6)
Income taxes paid		**(34.2)**	(31.8)
Net cash inflow from operating activities		**83.9**	94.6
Cash flows from investing activities			
Capital expenditure		**(31.3)**	(38.1)
Proceeds from the sale of property, plant and equipment		**1.6**	1.1
Proceeds from sale of investments		**-**	0.3
Acquisition of subsidiaries and joint ventures, net of cash acquired	14	**(7.7)**	(25.1)
Dividends received from joint ventures		**2.0**	-
Other investing outflows		**-**	(1.6)
Net cash outflow from investing activities		**(35.4)**	(63.4)
Net cash inflow before financing activities		**48.5**	31.2
Cash flows from financing activities			
Proceeds from borrowings	9	**0.8**	44.7
Settlement of forward foreign exchange contracts		**20.6**	3.9
Purchase of own shares		**-**	(5.2)
Borrowing facility arrangement costs		**-**	(1.4)
Dividends paid to equity shareholders	8	**(43.9)**	(43.9)
Dividends paid to non-controlling shareholders		**(2.5)**	(2.2)
Net cash outflow from financing activities		**(25.0)**	(4.1)
Net increase in cash and cash equivalents	9	**23.5**	27.1
Cash and cash equivalents at 1 January		**67.0**	38.5
Effect of exchange rate fluctuations on cash and cash equivalents		**10.5**	1.4
Cash and cash equivalents at 31 December		**101.0**	67.0

	Continuing operations £m	**Discontinued operations £m**	**2016 Total £m**	Continuing operations £m	Discontinued operations £m	2015 Total £m
Free cash flow						
Net cash inflow/(outflow) from operating activities	**83.9**	**-**	**83.9**	100.8	(65.2)	94.6
Additional funding contributions into Group pension plans	**7.7**	**-**	**7.7**	3.7	-	3.7
Capital expenditure	**(31.3)**	**-**	**(31.3)**	(38.1)	-	(38.1)
Proceeds from the sale of property, plant and equipment	**1.6**	**-**	**1.6**	1.1	-	1.1
Dividends received from joint ventures	**2.0**	**-**	**2.0**	-	-	-
Dividends paid to non-controlling shareholders	**(2.5)**	**-**	**(2.5)**	(2.2)	-	(2.2)
Free cash flow	**61.4**	**-**	**61.4**	65.3	(65.2)	59.1

Group Balance Sheet

As at 31 December 2016

	Notes	2016 £m	2015* £m
Assets			
Property, plant and equipment		**323.6**	285.3
Intangible assets		**781.9**	684.6
Employee benefits – net surpluses	11	**78.8**	59.9
Interests in joint ventures		**18.0**	16.1
Investments		**2.6**	3.0
Income tax recoverable		**1.0**	1.3
Deferred tax assets		**92.1**	70.7
Other receivables		**23.4**	19.0
Total non-current assets		**1,321.4**	1,139.9
Cash and short-term deposits		**144.4**	101.5
Inventories		**207.7**	167.7
Trade and other receivables		**393.2**	316.3
Income tax recoverable		**3.9**	2.8
Derivative financial instruments		**-**	0.5
Total current assets		**749.2**	588.8
Total assets		**2,070.6**	1,728.7
Equity			
Issued share capital		**27.8**	27.8
Retained Earnings		**2,370.0**	2,346.5
Other reserves		**(1,341.4)**	(1,501.9)
Equity attributable to the owners of the parent		**1,056.4**	872.4
Non-controlling interests		**42.1**	32.7
Total equity		**1,098.5**	905.1
Liabilities			
Interest-bearing borrowings		**330.8**	351.7
Employee benefits – net liabilities	11	**108.2**	95.2
Other payables		**16.5**	17.0
Provisions	16	**32.9**	29.5
Deferred tax liabilities		**48.6**	44.6
Total non-current liabilities		**537.0**	538.0
Interest-bearing borrowings		**133.9**	41.4
Trade and other payables		**232.7**	178.2
Income tax payable		**41.9**	48.3
Provisions	16	**25.7**	17.7
Derivative financial instruments		**0.9**	-
Total current liabilities		**435.1**	285.6
Total liabilities		**972.1**	823.6
Total equity and liabilities		**2,070.6**	1,728.7
Net debt			
Interest-bearing borrowings - non-current		**330.8**	351.7
- current		**133.9**	41.4
Cash and short-term deposits		**(144.4)**	(101.5)
Net debt	9	**320.3**	291.6

*Restated to reflect the amendments to the acquisition balance sheet of Sidermes SpA (note 14).

Group Statement of Changes in Equity

For the year ended 31 December 2016

	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 2015	27.8	(1,466.7)	2,332.1	893.2	29.9	923.1
Profit	-	-	48.8	48.8	5.2	54.0
Remeasurement of defined benefit liabilities/assets	-	-	13.0	13.0	-	13.0
Income tax relating to items not reclassified	-	-	1.6	1.6	-	1.6
Exchange differences on translation of the net assets of foreign operations	-	(29.1)	-	(29.1)	(0.2)	(29.3)
Exchange translation differences arising on net investment hedges	-	(6.1)	-	(6.1)	-	(6.1)
Other comprehensive (loss)/income, net of income tax	-	(35.2)	14.6	(20.6)	(0.2)	(20.8)
Total comprehensive (loss)/income	-	(35.2)	63.4	28.2	5.0	33.2
Purchase of own shares	-	-	(5.2)	(5.2)	-	(5.2)
Recognition of share-based payments	-	-	0.1	0.1	-	0.1
Dividends paid (note 8)	-	-	(43.9)	(43.9)	(2.2)	(46.1)
Total transactions with owners	-	-	(49.0)	(49.0)	(2.2)	(51.2)
As at 1 January 2016*	**27.8**	**(1,501.9)**	**2,346.5**	**872.4**	**32.7**	**905.1**
Profit	**-**	**-**	**56.9**	**56.9**	**6.3**	**63.2**
Remeasurement of defined benefit liabilities/assets	-	**-**	**9.5**	**9.5**	**-**	**9.5**
Income tax relating to items not reclassified	-	**-**	**(0.7)**	**(0.7)**	**-**	**(0.7)**
Exchange differences on translation of the net assets of foreign operations	**-**	**202.1**	**-**	**202.1**	**5.6**	**207.7**
Exchange translation differences arising on net investment hedges	**-**	**(41.6)**	**-**	**(41.6)**	**-**	**(41.6)**
Other comprehensive (loss)/income, net of income tax	**-**	**160.5**	**8.8**	**169.3**	**5.6**	**174.9**
Total comprehensive (loss)/income	**-**	**160.5**	**65.7**	**226.2**	**11.9**	**238.1**
Recognition of share-based payments	**-**	**-**	**1.7**	**1.7**	**-**	**1.7**
Dividends paid (note 8)	**-**	**-**	**(43.9)**	**(43.9)**	**(2.5)**	**(46.4)**
Total transactions with owners	**-**	**-**	**(42.2)**	**(42.2)**	**(2.5)**	**(44.7)**
As at 31 December 2016	**27.8**	**(1,341.4)**	**2,370.0**	**1,056.4**	**42.1**	**1,098.5**

*Restated to reflect the amendments to the acquisition balance sheet of Sidermes SpA (note 14).

1 Basis of preparation

1.1 Basis of accounting

The financial information set out in this annual results announcement does not constitute the Company's statutory accounts for the years ended 31 December 2016 or 2015, but is derived from those accounts. Statutory accounts for 2015 have been delivered to the registrar of companies and those for 2016 will be delivered in due course. The auditor has reported on those accounts; their reports were (i) unqualified (ii) did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying their report and (iii) did not contain a statement under section 498 (2) or (3) of the Companies Act 2006.

1.2 Basis of consolidation

The consolidated financial statements of the Group 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 Group income statement from the effective date of acquisition or up to the effective date of disposal, as appropriate.

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 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 since the date of the combination. Total comprehensive income 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 forecasts for the Group for a period in excess of 12 months from the date of approval of the 2016 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 forecasts show that the Group will be able to operate within the current committed debt facilities and show continued compliance with the Company’s financial covenants. On the basis of the exercise described above and the Group’s available committed debt facilities, the Directors consider that the Group and Company have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt a going concern basis in preparing the 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”

IAS 1 Presentation of Financial Statements provides no definitive guidance as to the format of the income statement, but states key lines which should be disclosed. It also encourages the disclosure of additional line items and the reordering of items presented on the face of the income statement when appropriate for a proper understanding of the entity’s financial performance. In accordance with IAS 1, the Company has adopted a columnar presentation for its Group income statement, to separately identify headline performance results, as the Directors consider that this gives a better view of the underlying results of the ongoing business. As part of this presentation format, the Company 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 both in a better understanding of the financial performance achieved and in making projections of future results. 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.

Both materiality and the nature and function 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, initial recognition and subsequent increase, decrease and amortisation of US deferred tax assets, together with items always reported separately, 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 exceptional items and items reported separately.

1.6 New and revised IFRS

IFRS 9 Financial Instruments (effective after 1 January 2018, for the year ending 2018), replaces the existing guidance in IAS 39 Financial Instruments Recognition and Measurement. IFRS 9 includes revised guidance on the classification and measurement of financial instruments, including a new expected credit loss model for calculating impairment on financial assets, and new general hedge accounting requirements. It also carries forward the guidance on recognition and derecognition of financial instruments from IAS 39. Based on an assessment of the adoption of IFRS 9, the Group does not believe there will be a significant impact on its Consolidated Financial Statements.

IFRS 15 Revenue from Contracts with Customers (effective after 1 January 2018, for the year ending 2018) establishes a comprehensive framework for determining whether, how much and when revenue is recognised. It replaces existing revenue recognition guidance, including IAS 18 Revenue, IAS 11 Construction Contracts and IFRIC 13 Customer Loyalty Programmes. Based on an assessment of the adoption of IFRS 15, the Group does not believe there will be a significant impact on its Consolidated Financial Statements.

IFRS 16 Leases (effective after 1 January 2019, for the year ending 2019), replaces the existing guidance in IAS 17 Leases. IFRS 16 provides a single lessee accounting model, requiring lessees to recognise assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. The Group is currently assessing the potential impact on its Consolidated Financial Statements resulting from the application of IFRS 16.

Other new or amended standards are not expected to have a significant impact on the Group’s financial statements.

2 Segment information

Operating segments for continuing operations

For reporting purposes, the Group is organised into two main business segments: Steel and Foundry. It is the Vesuvius Board which makes the key operating decisions in respect of these segments. The information used by the Vesuvius Board to review performance and determine resource allocation between the business segments is presented with the Group's activities segmented between the two business segments, Steel and Foundry. Taking into account the basis on which the Group's activities are reported to the Vesuvius Board, the Directors believe that these two business segments are the appropriate way to analyse the Group's results.

Segment revenue represents revenue from external customers (inter-segment revenue is not material). Trading profit includes items directly attributable to a segment as well as those items that can be allocated on a reasonable basis.

2.1 Income statement

			2016
	Steel	**Foundry**	**Continuing operations**
	£m	**£m**	**£m**
Segment revenue	**942.0**	**459.4**	**1,401.4**
Segment EBITDA	**107.0**	**68.6**	**175.6**
Segment depreciation	**(27.8)**	**(14.5)**	**(42.3)**
Segment trading profit	**79.2**	**54.1**	**133.3**
Amortisation of acquired intangible assets			**(17.1)**
Restructuring charges			**(28.5)**
Gain on employee benefit plan			**5.2**
Operating profit			**92.9**
Net finance costs			**(14.5)**
Share of post-tax profit of joint ventures			**1.0**
Profit before tax			**79.4**

			2015
	Steel	Foundry	Continuing operations
	£m	£m	£m
Segment revenue	897.6	424.4	1,322.0
Segment EBITDA	103.8	57.3	161.1
Segment depreciation	(24.3)	(12.8)	(37.1)
Segment trading profit	79.5	44.5	124.0
Amortisation of intangible assets			(16.6)
Restructuring charges			(14.6)
Operating profit			92.8
Net finance costs			(15.4)
Profit before tax			77.4

3 Amortisation of intangible assets

Other intangible assets are amortised on a straight-line basis over their estimated useful lives. The assets acquired and their remaining useful lives are shown below.

	Remaining useful life years	Net book value 2016 £m
Foseco		
- Customer relationships	11.3	**64.8**
- Trade name	11.3	**40.8**
- Intellectual property rights	1.3	**10.0**
Mould and tundish business Carboox		
- Customer relationships	19.9	**3.7**
- Trade name	1.9	**0.4**
		119.7

4 Restructuring charges from continuing operations

The 2016 restructuring charges were £28.5m (2015: £14.6m). The Group-wide restructuring programme initiated in 2015 was continued, resulting in charges of £28.5m (2015: £15.5m) reflecting redundancy costs of £21.4m (2015: £13.6m), plant closure costs of £4.2m (2015: £1.3m), consultancy fees of £2.0m (2015: £0.6m) and an inventory write-off of £0.9m (2015: £nil). In 2015 there was also a release of onerous lease provisions of £0.5m and a £0.4m release of provisions for potential claims that had since expired relating to the termination of agents.

The net tax credit attributable to the total restructuring charges was £3.8m (2015: £1.5m).

Cash costs of £16.8m (2015: £11.5m) (Note 10) were incurred in the year in respect of the restructuring programme leaving provisions made but unspent of £18.5m as at 31 December 2016 (2015: £9.8m), of which £2.7m relates to future costs in respect of leases expiring between one and six years.

5 Finance costs

Total net finance costs for the year of £14.5m is analysed in the table below.

	2016 £m	2015 £m
Interest payable on borrowings		
Loans, overdrafts and factoring arrangements	**15.1**	14.9
Obligations under finance leases	**0.2**	0.1
Amortisation of capitalised borrowing costs	**0.5**	0.4
Total interest payable on borrowings	**15.8**	15.4
Interest on net retirement benefits obligations	**1.3**	0.9
Adjustments to discounts on provisions and other liabilities	**(0.2)**	1.0
Adjustments to discounts on receivables	**0.3**	(0.3)
Finance income	**(2.7)**	(1.7)
Total net finance costs	**14.5**	15.4

6 Income tax costs

The Group's effective tax rate, based on the income tax costs associated with headline performance of £31.4m (2015: £27.7m), was 26.4% in 2016 (2015: 25.5%).

The Group's total income tax costs include a credit of £5.0m (2015: £2.9m) relating to separately reported items comprising: a credit of £3.8m (2015: £1.5m credit) in relation to restructuring charges; a credit of £3.7m (2015: £4.7m credit) relating to the amortisation of intangible assets; a charge of £2.1m (2015: £3.3m charge) in respect of the potential recognition of US temporary differences and a charge of £0.4m (2015: £nil) relating to the gain on employee benefit plan. The net tax charge in the Group statement of comprehensive income in the year amounted to £0.7m (2015: £1.6m credit) related to tax on net actuarial gains and losses on employee benefits plans and tax on exchange differences.

7 Earnings per share ("EPS")

7.1 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 Group income statement, of £46.7m (2015: £47.4m), being the profit for the year of £53.0m (2015: £52.6m) less non-controlling interests of £6.3m (2015: £5.2m); basic and diluted EPS from total operations are based on the profit attributable to owners of the parent of £56.9m (2015: £48.8m); headline and diluted headline EPS are based upon headline profit from continuing operations attributable to owners of the parent of £82.1m (2015: £75.7m). The table below reconciles these different profit measures.

	Continuing operations 2016 £m	Continuing operations 2015 £m
Profit attributable to owners of the parent	**46.7**	47.4
Adjustments for separately reported items:		
Amortisation of intangible assets	**17.1**	16.6
Restructuring charges	**28.5**	14.6
Gain on employee benefit plan	**(5.2)**	-
Income tax credit	**(5.0)**	(2.9)
Headline profit attributable to owners of the parent	**82.1**	75.7

7.2 Weighted average number of shares

	2016 £m	2015 £m
For calculating basic and headline EPS	269.9	269.7
Adjustment for dilutive potential ordinary shares	0.8	0.6
For calculating diluted and diluted headline EPS	270.7	270.3

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 on the conversion of all dilutive potential ordinary shares expected to vest, 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 earnings per share, or increase loss per share, from continuing operations.

7.3 Per share amounts

		Continuing operations pence	**Discontinued operations pence**	**Total 2016 pence**	Continuing operations pence	Discontinued operations pence	Total 2015 pence
Earnings per share	- basic	**17.3**	**3.8**	**21.1**	17.6	0.5	18.1
	- **headline**	**30.4**			28.1		
	- diluted	**17.3**	**3.7**	**21.0**	17.5	0.6	18.1
	- **diluted headline**	**30.3**			28.0		

8 Dividends

	2016 £m	2015 £m
Amounts recognised as dividends		
Final dividend for the year ended 31 December 2014 of 11.125p per ordinary share	-	30.1
Interim dividend for the year ended 31 December 2015 of 5.15p per ordinary share	-	13.8
Final dividend for the year ended 31 December 2015 of 11.125p per ordinary share	**30.0**	-
Interim dividend for the year ended 31 December 2016 of 5.15p per ordinary share	**13.9**	-
	43.9	43.9

A final dividend for the year ended 31 December 2015 of £30.0m (2014: £30.1m), equivalent to 11.125 pence (2014: 11.125 pence) per ordinary share, was paid in May 2016 (May 2015) and an interim dividend for the year ended 31 December 2016 of £13.9m (2015: £13.8m), equivalent to 5.15 pence (2015: 5.15 pence) per ordinary share, was paid in September 2016 (September 2015).

A proposed final dividend for the year ended 31 December 2016 of £30.8m, equivalent to 11.40 pence per ordinary share, is subject to approval by shareholders at the Company's Annual General Meeting and has not been included as a liability in these financial statements. If approved by shareholders, the dividend will be paid on 19 May 2017 to ordinary shareholders on the register at 7 April 2017.

9 Net debt

	Balance as at 1 January 2016 as restated £m	Foreign exchange adjustments £m	Non-cash movements £m	Cash flow £m	Balance as at 31 December 2016 £m
Cash and cash equivalents					
Cash at bank and in hand	**101.5**	**17.4**	**-**	**25.5**	**144.4**
Bank overdrafts	**(34.5)**	**(6.9)**	**-**	**(2.0)**	**(43.4)**
	67.0	**10.5**	**-**	**23.5**	**101.0**
Borrowings, excluding bank overdrafts					
Current	**(7.5)**	**(8.9)**	**(81.1)**	**6.4**	**(91.1)**
Non-current	**(353.3)**	**(52.5)**	**81.1**	**(7.2)**	**(331.9)**
	(360.8)	**(61.4)**	**-**	**(0.8)**	**(423.0)**
Capitalised borrowing costs	**2.2**	**-**	**(0.5)**	**-**	**1.7**
Net debt	**(291.6)**	**(50.9)**	**(0.5)**	**22.7**	**(320.3)**

As at 31 December 2016, the Group had committed borrowing facilities of £576.9m (2015: £532.4m), of which £158.3m (2015: £181.1m) were undrawn. These undrawn facilities are due to expire in June 2020. The Group's borrowing requirements are met by USPP and a multi-currency committed syndicated bank facility of £300m (2015: £300m). The USPP facility was fully drawn as at 31 December 2016 and amounted to £276.9m ($310m and €30m), of which $110m is repayable in 2017, $140m in 2020, €15m in 2021, $30m in 2023, €15m in 2025 and $30m in 2028. The syndicated bank facility is repayable in June 2020.

10 Cash generated from operations

	Continuing operations £m	Discontinued operations £m	Total 2016 £m	Continuing Operations £m	Discontinued Operations £m	Total 2015 £m
Operating profit	**92.9**	**1.2**	**94.1**	92.8	1.4	94.2
Adjustments for:						
Amortisation of intangible assets	**17.1**	**-**	**17.1**	16.6	-	16.6
Restructuring charges	**28.5**	**-**	**28.5**	14.6	-	14.6
Gains relating to employee benefit plans	**(5.2)**	**-**	**(5.2)**	-	-	-
Depreciation	**42.3**	**-**	**42.3**	37.1	-	37.1
EBITDA	**175.6**	**1.2**	**176.8**	161.1	1.4	162.5
Net (increase)/decrease in trade and other working capital	**(20.9)**	**(1.2)**	**(22.1)**	0.3	(7.6)	(7.3)
Outflow related to restructuring charges	**(16.8)**	**-**	**(16.8)**	(11.5)	-	(11.5)
Additional pension funding contributions	**(7.7)**	**-**	**(7.7)**	(3.7)	-	(3.7)
Cash generated from operations	**130.2**	**-**	**130.2**	146.2	(6.2)	140.0

11 Employee benefits

The net employee benefits balance as at 31 December 2016 of £29.4m (2015: £35.3m) in respect of the Group's defined benefit retirement plans and other post-retirement benefits plans, results from an actuarial valuation of the Group's defined benefit pension and other post-retirement obligations as at that date. As analysed in the following table, the net balance comprised net surpluses (assets) of £78.8m (2015: £59.9m), relating entirely to the Group's main defined benefit pension plan in the UK, together with net liabilities (deficits) of £108.2m (2015: £95.2m).

	2016	2015
	£m	£m
Employee benefits - net surpluses		
UK defined benefit pension plans	**78.6**	59.5
ROW defined benefit pension plans	**0.2**	0.4
Net surpluses	**78.8**	59.9
Employee benefits - net liabilities		
UK defined benefit pension plans	**(1.9)**	(1.8)
US defined benefit pension plans	**(37.7)**	(37.7)
German defined benefit pension plans	**(45.3)**	(36.3)
ROW defined benefit pension plans	**(16.4)**	(13.7)
Other post-retirement benefit obligations	**(6.9)**	(5.7)
Net liabilities	**(108.2)**	(95.2)
Total liabilities	**(29.4)**	(35.3)

The total net charge of £2.8m (2015: £8.1m) recognised in the Group income statement in respect of the Group's defined benefit retirement plans and other post-retirement benefits plans is recognised in the following lines.

		2016	2015
		£m	£m
In arriving at trading profit:	-within other manufacturing costs	**2.0**	2.1
	-within administration, selling and distribution costs	**4.4**	4.3
In arriving at profit before tax:	-within restructuring charges	**0.3**	0.8
	-gain on employee benefit plan	**(5.2)**	-
	-within net finance costs	**1.3**	0.9
Total net charge - continuing operations		**2.8**	8.1

At 31 December 2016 the settlement gain of £5.2m (2015: £nil) which arose during the year principally related to the buy-out of members of the US plan and German members moving their existing plans into a new defined contribution plan.

12 Contingent liabilities

Guarantees given by the Group under property leases of operations disposed of amounted to £1.6m (2013: £1.7m).

Vesuvius has extensive international operations and is subject to various legal and regulatory regimes, including those covering taxation and environmental matters. Several of Vesuvius' subsidiaries are parties to legal proceedings, certain of which are insured claims arising in the ordinary course of the operations of the company involved, and the Directors are aware of a number of issues which are, or may be, the subject of dispute with tax authorities. Reserves are made for the expected amounts payable in respect of known or probable costs resulting both from legal or other regulatory requirements, or from third-party claims. 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.

Certain of Vesuvius' subsidiaries are subject to 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. A number of lawsuits have been withdrawn, dismissed or settled and 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.

13 Related parties

All transactions with related parties are conducted on an arm's length basis and in accordance with normal business terms. Transactions between related parties that are Group subsidiaries are eliminated on consolidation.

14 Acquisition of subsidiaries and joint ventures, net of cash acquired

14.1 Current year acquisition

On 1 December 2016, the Group acquired a 100% ownership interest in Mastercodi Industrial Ltda, the mould and tundish flux business of Carboox, for total consideration of £8.0m, of which £0.7m was deferred. The fair value of the net assets acquired was £4.9m and included identified intangible assets relating to customer relationships and trade names of £3.8m. The transaction resulted in the recognition of £3.1m of goodwill attributable to the synergies which are expected from combining the business with the operations of the Group.

The £7.7m disclosed in the Group statement of cash flows in respect of the acquisitions of subsidiaries, net of cash acquired, comprised £7.3m paid for current year acquisitions and a £0.4m payment of contingent consideration payment for Process Metrix.

14.2 Prior year acquisition

On 15 May 2015, the Group acquired a 100% ownership interest in the Sidermes Group ('Sidermes'), a leading supplier of temperature and chemical measurement solutions. The fair values of the acquired assets and liabilities disclosed as provisional in the 2015 Annual Report in respect of this acquisition have been finalised during the period. The following adjustments have been made, as at the date of acquisition:

	Fair values Previously disclosed	Adjustments made	Fair value of net assets acquired
Consideration transferred	£m	£m	£m
Cash	24.4	-	24.4
Total consideration transferred	24.4	-	24.4
Identifiable assets acquired and liabilities assumed at fair value			
Inventories	6.7	(0.3)	6.4
Trade and other receivables	6.4	(0.3)	6.1
Property, plant and equipment	5.7	-	5.7
Cash	0.6	-	0.6
Trade and other payables	(3.7)	(0.2)	(3.9)
Deferred tax liability	(1.2)	-	(1.2)
Employee benefits net liabilities	(0.9)	-	(0.9)
Interest bearing borrowings	(0.8)	-	(0.8)
Provisions	(0.3)	(0.1)	(0.4)
Total identifiable net assets at fair value	12.5	(0.9)	11.6
Goodwill	11.9	0.9	12.8

15 Discontinued operations

Discontinued operations income during 2016 of £10.2m, comprised a £9.0m tax credit relating to the release of a provision for possible China taxes and a £1.2m release of provisions no longer required. In 2015, discontinued operations income of £1.4m related to a partial reimbursement of costs charged in 2014 for the MacDermid claim.

The net cash outflow from discontinued operations of £6.2m during 2015 represented the net payment of £5.5m to MacDermid following the settlement agreement in 2014, £0.4m VAT payment, and £0.3m other payments.

15.1 Results of discontinued operations

	2016 **£m**	2015 £m
Other income	**10.2**	1.4
Profit before tax – attributable to owners of the parent	**10.2**	1.4
Earnings per share – pence		
Basic	**3.8**	0.5
Diluted	**3.7**	0.6

15.2 Cash flows from discontinued operations

	2016 **£m**	2015 £m
Net cash outflow from – operating activities	**-**	(6.2)

16 Provisions

	Disposal and Closure costs **£m**	**Restructuring charges** **£m**	**Other** **£m**	**Total** **£m**
As at 1 January 2016 *	**30.7**	**9.8**	**6.7**	**47.2**
Exchange adjustments	**4.9**	**1.3**	**0.7**	**6.9**
Charge to Group income statement	**0.2**	**24.1**	**10.7**	**35.0**
Unused amounts released to Group income statement	**(2.6)**	**-**	**(0.5)**	**(3.1)**
Adjustment to discount	**(0.3)**	**0.1**	**-**	**(0.2)**
Cash spend	**(1.4)**	**(16.8)**	**(10.7)**	**(28.9)**
Transferred from other balance sheet accounts	**1.7**	**-**	**-**	**1.7**
As at 31 December 2016	**33.2**	**18.5**	**6.9**	**58.6**

*Restated to reflect the amendments to the acquisition balance sheet of Sidermes SpA (note 14).

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.

17 Alternative Performance Measures

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. 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.

17.1 Headline

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

17.2 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.

17.3 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.

17.4 Trading profit

Trading profit 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.

17.5 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.

17.6 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.

17.7 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.

17.8 Operating cash flow

Operating cash flow is cash generated from continuing operations before restructuring and additional pension funding contributions but after deducting capital expenditure net of asset disposals. It is used in calculating the Group's cash conversion.

17.9 Cash conversion

Cash conversion is calculated as operating cash flow divided by trading profit. It is useful for measuring the rate at which cash is generated from trading profit.

17.10 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, but before additional funding contributions to Group pension plans. 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.

17.11 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 year, at constant currency. Average trade working capital (comprising inventories, trade receivables and trade payables) is calculated as the average of the 12 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.

17.12 Earnings before interest, tax, depreciation and amortisation ('EBITDA')

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

17.13 Net interest

Net interest is calculated as interest payable on borrowings less interest receivable, excluding any item separately reported. It is used in the calculation of the Group's interest cover ratio.

17.14 Interest cover

Interest cover is the ratio of EBITDA to net interest. 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.

17.15 Net debt

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

17.16 Net debt to EBITDA

Net debt to EBITDA is the ratio of net debt at the year-end to EBITDA for that year. 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.

17.17 Return on net assets ('RONA')

RONA is calculated as trading profit plus share of post-tax profit of joint ventures, divided by average net operating assets, at constant currency (being the average over the previous 12 months of property, plant and equipment, trade working capital and other operating receivables and payables). 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.

17.18 Constant currency

Figures presented at constant currency represent December 2015 numbers retranslated to average 2016 exchange rates.

18 Exchange rates

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 year-end rates. The principal exchange rates used were as follows:

	Income and expense Average rates		Change	Assets and liabilities Year End rates		Change
	2016	2015		**2016**	2015	
US Dollar	**1.4**	1.5	(11.2%)	**1.2**	1.5	(16.3%)
Euro	**1.2**	1.4	(11.1%)	**1.2**	1.4	(13.5%)
Chinese Renminbi	**9.0**	9.6	(6.3%)	**8.6**	9.6	(10.5%)
Japanese Yen	**147.6**	185.1	(20.2%)	**144.2**	177.3	(18.7%)
Brazilian Real	**4.7**	5.1	(6.7%)	**4.0**	5.8	(31.2%)
Indian Rupee	**91.1**	98.0	(7.0%)	**83.8**	97.6	(14.1%)
South African Rand	**20.0**	19.5	2.7%	**16.9**	22.8	(25.7%)

Alternative performance measures - supplementary information

5 year history at constant currency

	2012	2013	2014	2015	2016
Revenue (£m)	**1,529.8**	**1,502.1**	**1,547.2**	**1,452.9**	**1,401.4**
Steel	1,021.2	1,024.4	1,059.8	981.9	942.0
Foundry	508.6	477.6	487.3	471.0	459.4
Trading Profit (£m)	**125.1**	**140.8**	**157.6**	**137.1**	**133.3**
Steel	82.9	91.9	108.0	86.7	79.2
Foundry	42.1	48.8	49.6	50.4	54.1
Return on Sales	**8.2%**	**9.4%**	**10.2%**	**9.4%**	**9.5%**
Steel	8.1%	9.0%	10.2%	8.8%	8.4%
Foundry	8.3%	10.2%	10.2%	10.7%	11.8%