

ACTICOTE CG – for compacted graphite iron castings



HIGH PERFORMANCE WATER-BASED COATINGS

- + Reduced flake graphite skin formation
- + Improved mechanical properties
- + Reduction in machining allowance
- + Superior casting quality
- + Higher productivity



Coatings for the production of compacted graphite iron castings

for the highest quality demands of the modern foundry

With increasing legislation on controlling the emissions of internal combustion engines, the demands on the strength and integrity of the engine block have increased at the same time as the desire to reduce the overall weight of the components to improve fuel efficiency. For larger engine blocks for automotive and commercial vehicle applications, grey iron is being superseded as the material of choice by newer materials such as compacted graphite iron (CGI). The graphite particles in CGI are randomly orientated as in grey iron but are shorter and thicker and form an entangled, three-dimensional structure within the iron matrix. The graphite structure inhibits crack formation and propagation; with CGI being superior to grey iron in terms of mechanical properties and has improved thermal conductivity in comparison with ductile iron.

The correct precipitation of graphite to form CGI requires a very controlled casting process; however even with the best controlled process, interactions at the core and metal interface can lead to the disruption of the compacted graphite within the surface of the casting. This results in a flake graphite containing skin. Generally, this skin is less than one millimetre thick, but it can be greater in thicker sectioned castings. The formation of a flake graphite skin can lead to reduced mechanical properties, an increased allowance for machining or an increase in the casting wall-thickness to accommodate for this disruption, incurring extra costs or limiting design optimisation.

ACTICOTE CG coatings have been especially designed to reduce unwanted interactions at the metal / core interface and minimise the flake graphite skin formation in CGI castings.

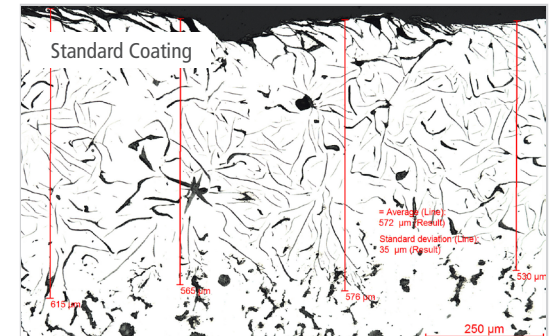
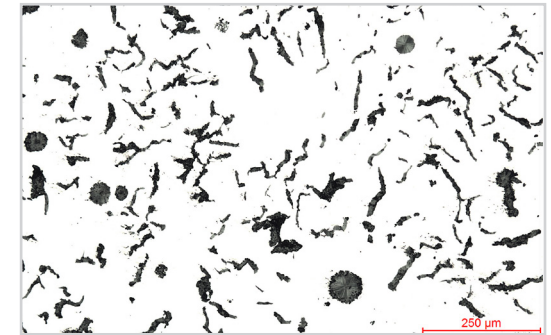
ACTICOTE CG

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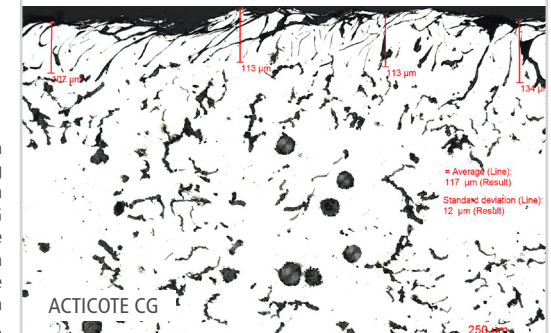
ACTICOTE CG is a range of water-based refractory coatings designed for the dipping of cores manufactured using chemically bonded sand, and used in the production of CGI castings. ACTICOTE CG helps reduce the formation of flake graphite within the surface of the cast component, whilst also providing a highly refractory layer that prevents burn-on, metal penetration and other common casting surface defects. The use of ACTICOTE CG enables foundries to meet the design requirements for components cast in CGI and allows engineers to optimise component specifications to reduce weight whilst enhancing mechanical properties.

The coatings have excellent rheological properties, optimised for dipping applications, ensuring that the applied layer is of a consistent thickness and free from runs and drips. The products are supplied ready for use and are stable in operation with low sedimentation.

CGI Bulk
Microstructure



Comparison of a
standard coating
(above) with
ACTICOTE CG
(below), detailing the
significant reduction
in flake graphite
skin formation in a
controlled test.



Quality is assured

Higher quality and lower costs

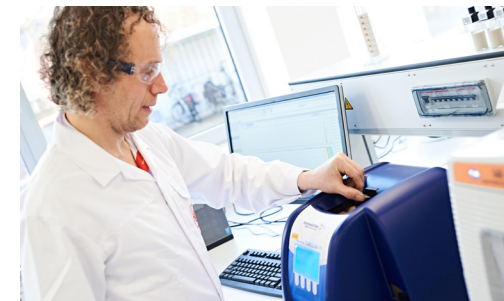
Quality management

The Foseco quality management system is certified against DIN ISO 9001, VDA 6.1 and ISO 14001. All relevant product quality features of ACTICOTE CG coatings are controlled and recorded according to these quality standards.

Service

Our engineers and product managers work in partnership with our customers to help them improve productivity, process control, casting quality and the working environment.

Further information regarding ACTICOTE CG or the extensive range of coating products for foundries can be obtained from your local Foseco team.



Quality assured
processes



Customer focused
research &
development



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