



Declaration of Performance (DoP)
No: 20-09-M20

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| 1. Unique identification of the product: | Magnetite 20 |
| 2. Intended use or uses of the product: | Preparation of concrete for use in buildings, roads and other civil engineering works |
| 3. Standard: | EN 12620 |
| 4. Manufacturer: | LKAB |
| 5. Supplier | LKAB Minerals Ltd, Raynesway, Derby, DE21 7BE |
| 6. Registered Trademark: | Magnetite 20, M20 |
| 7. System of assessment and verification of constancy or performance of the product: | System 4 |

Declared Performance for essential parameters:

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|--|----------------------------|
| Particle size | 4/16mm |
| Particle grade | G _C 90/15 |
| Flakiness index | F ₁₅ |
| Particle density [Mg/m³] | 4.76 |
| Water absorption | 0,30% |
| Fines | |
| Shell content | SC ₁₀ / 0,0% |
| Fines content | f ₄ |
| Resistance to fragmentation | LA24 |
| Resistance to wear [MDE] | M _{DE} 11 |
| Resistance to polishing [PSV] | PSV ₄₄ / 51 |
| Resistance to wear [AAV] | NPD |
| Resistance to wear to studded tyres | NPD |
| Composition/content | |
| Chlorides | <0,001 Wt% Cl |
| Sulphate, acid Soluble | AS _{0,2} / <0,1% |
| Total Sulphur | <0,1 Wt% S |
| Constituent affecting the setting and hardening of concrete | Pass |
| Carbon Content | 3.22 Wt% CO ₂ |
| Volume stability- dry shrinkage | Pass / 0.023% |
| Dangerous substance | |
| Radioactive radiation | NPD |
| Emission of heavy metals | NPD |
| Emission of polyaromatic carbons | NPD |
| Emission of other dangerous substances | NPD |
| Durability against freeze-thaw | F ₁ / 0,1% |
| Alkali-silica reactivity and petrographic composition | Low Reactivity / Magnetite |
| NPD = No Performance Determined | |

| | | | | | | |
|----------------------------------|-----|-----|-----|------|------|------|
| Declared particle grading | | | | | | |
| Sieve (mm) | 2.0 | 4.0 | 8.0 | 16.0 | 20.0 | 31.5 |
| Passing (% by weight) | 4 | 8 | 42 | 94 | 99 | 100 |
| Upper limit (% by weight) | 5 | 15 | 60 | 99 | 100 | 100 |
| Lower limit (% by weight) | 0 | 0 | 24 | 90 | 98 | 100 |

Other Information

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, as it has effect in the United Kingdom under the sole responsibility of the manufacturer identified above.'

Performance for the above product corresponds with given performance.

Signed on behalf of the supplier by Lee Bontoft, Area 2 Technical Manager

Scunthorpe September 30th, 2020