Sopro Rapidur® B5 Rapid Drying Floor Screed

A rapid drying, polymer modified floor screed, consisting of a special polymer-modified binder, mixed with suitable sand and water for use in rapid-set cement screed applications, allowing early flooring installation, based on DIN 18 560. Achieves grade CT-C45-F7 after 28 days[1)]. Low-chromate to Regulation (EC) No 1907/2 06, Annex XVII.

- New, enhanced quality
- Ready for tiling after only approx. 3 days
- For fast-track or tightly scheduled screed laying
- Suitable for floor heating systems
- Long working life: approx. 2–3 hours
- May be applied in mixing ratios 1:4 and 1:5
- High resistance to moisture migration from substrate
- Suitable for renovation and refurbishment schemes
- Pumpable
- EMICODE system of GEV (German Association for control of Emissions in Products for Flooring Installation): EC1^{PLUS} R ('very-low-emission-plus') rating
- For indoor and outdoor use

Field Of Application

For use as rapid-set bonded screeds, unbonded screeds, screeds laid on insulation layer, or heated screeds to allow early flooring installation. For renovation and refurbishment for cement screeds allowing early loading and early flooring installation to BS 8204-1:2003 and DIN 18560-2:2004.

Substrate Preparation

The substrate should be clean, solid, strong, dimensionally stable and free from any adhesion-impairing substances. In the event of possible moisture action from adjoining elements, e. g. concrete substrates, an effective waterproof membrane (to BS 8204-1:2003) is required for floating screeds. For floating and unbonded constructions, install an edge insulation of > 8mm around the perimter of all walls and columns. With bonded constructions, installation of perimeter strip may likewise be appropriate to prevent any build-up restraint stresses at perimeter joints. Where Sopro Rapidur® B5 is used to lay bonded screeds, substrates should be mechanically roughened (e.g. by shot blasting) and cleaned in advance. Pre-wet substrate, pretreat with Sopro HSF 748 flexible bonding slurry with trass (or Sopro's No.1 flexible tile adhesive), then lay screed wet-on-wet. Wet-on-wet application onto Sopro EPG 522 epoxy primer (or Sopro BH 869 construction resin) is recommended for heavy-duty applications. Contact SMET for range of Sopro materials. All relevant standards, guidelines and recommendations apply and workmanship must comply with good practice.

Use with Underfloor Heating

Suitable for heated screeds with max. +55 °C flow temperature. Prior to laying tiles or other floor coverings, the screed should be heated up and allowed to cool in accordance with the basic procedures required for traditional cement screeds. The heating phase should commence at the earliest three days after screed laying. During the first heating cycle, a +25 °C flow temperature should be maintained for three days. The system should then be set to the maximum flow temperature, to be maintained for a further four days, before being lowered to the laying temperature.

Mixing & Application

All standard screed mixing and pumping equipment may be used in conjunction with Sopro Rapidur® B5.

Mixing ratio 1:4 = 25 kg Sopro Rapidur® B5 : 100 kg 0 – 8 mm screed sand to DIN EN 12 620 (15 shovelfuls): 7.5–8.5 ltr water (depending on sand moisture and mortar consistency).

Mixing ratio 1:5 = 25 kg Sopro Rapidur® B5 : 125 kg 0 – 8 mm screed sand to DIN EN 12 620 (20 shovelfuls): 9 –10 ltr water (depending on sand moisture and mortar consistency).

Mix Sopro Rapidur® B5 to an earth-moist to soft plastic, though not overly thin consistency. No other cements or screed admixtures should be added. Mixing, placing and trowelling should be performed in immediate succession. Only lay screed sections that may be completed within working life of approx. 2 hours. Stiffened material must not be retempered by addition of water or mixing with fresh material to restore workability. The required screed thickness should be determined in function of loads and flooring type, in accordance with BS8204-1:2003. If the installation of the screed is interrupted away from a construction joint, cut a day joint vertically through the screed and insert pieces of 3-6 mm diameter, steel rods 200-300 mm long, spaced at 200-300mm. Be sure to thoroughly clean mixers, pumps and hoses without delay.

Note: Screed constructions are heavy-duty building elements requiring careful design, co-ordination and workmanship. For this reason please request guidance from the SMET Technical Team.

may be added to the grout or slurry in accordance with the manufacturer's instructions.

* Mixing ratio: 1 : 5 (25 kg Rapidur® B5 : 125 kg 0–8 mm screed sand to DIN EN 12 620)

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Mixing Ratio

	200 ltr screed mixer	
Mixing ratio	1:4	1:5
Binder (kg)	75	62.5
Binder (bag)	3	2.5
Dry 0/8 sand (kg)	300	300
Dry 0/8 sand (shovefuls)	Approx. 45 - 50	Approx. 45 - 50
Water	22.5 - 25.5	21.6 - 24.0
w/c ratio	0.30 - 0.34	0.36 - 0.40

Bonded Construction

The base concrete should be kept wet for several hours before the levelling screed is to be laid, e.g. overnight, any excess water being removed before grouting. Within a period of 30 min before the screed is to be laid (less in hot weather), a thin layer of neat cement grout or slurry of creamy consistency should be brushed into the surface of the base concrete. It is essential that the levelling screed is compacted onto the base while the grout is still wet. A proprietary bonding agent may be used or a proprietary bonding admixture may be added to the grout or slurry in accordance with the manufacturer's instructions. In these cases the appropriate procedure should still be carried out. Proprietary bonding agents should be used in accordance with the manufacturer's instructions, which usually require the screed to be placed while the bonding agent is still tacky. Polyvinyl acetate (PVA) bonding agents are unsuitable for bonding screeds. Wetting of the base can be unnecessary in the case of some proprietary bonding agents, e.g. epoxy resin. Maximum and minimum screed thickness depends on incorporated aggregate. The screed should be at least three times and at most ten times as thick as maximum particle diameter of aggregate. 0-8 mm graded screed is recommended; coat thickness approx. 25-80 mm, 0-5 graded screed is recommended coat thickness 15-50mm.

Un-Bonded Construction

Install an edge insulation of > 8mm around the perimter of all walls. When laid on a damp-proof membrane (except one formed by an epoxy resin that can function as a bonding agent, a separating layer or a base that incorporates a waterproofing admixture or has been contaminated (e.g. with oil), or a base that for any reason cannot be prepared for bond as above), the screed thickness at any point should be not less than 35 mm.

Floating Construction

Install an edge insulation of > 8mm around the perimeter of all walls. The insulation should be high density and not compress more than 3 mm under the anticipated final load. Where underfloor heating or cooling pipes are incorporated, they should be located a minimum of 25 mm below the surface of the screed. Please refer to Underfloor Heating paragraph re. commissioning of Underfloor Heating. Screed thickness at any point should be not less than 50 mm.

Tiling and other Flooring Works

Placed screeds incorporating Sopro Rapidur® B5 are ready for tiling after approx. 3 days. Maximum permissible moisture content ≤ 2.0% CM **must be** confirmed by CM measurement prior to flooring installation. Particularly impervious floor coverings, e.g. linoleum, PVC etc., should only be laid after 3–5 days and after achievement of residual moisture content ≤ 1.8% CM. Wood floor finishes, e.g. parquet, are governed by guidelines set out in relevant BEB data sheet 8.1 "Assessment and preparation of substrates. Laying of elastic and textile floor coverings, laminate, parquet and wood blocks. Heated and unheated floor constructions". Please contact SMET Technical for support. General screed requirements prior to flooring installation: exact compliance is required with specified mixing ratio, water/cement ratio and application temperature. All approved floor laying products in Sopro range may then, in principle, be used for subsequent laying of tile, mosaic, natural stone and cast stone coverings. To achieve early walkability of floor covering, use of Sopro rapid-set products is particularly recommended. Sopro FS15 550 is recommended for any necessary surface filling or floor levelling.

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Licence

EMICODE system of GEV (German Association for Control of Emissions in Products for Flooring Installation): EC1^{PLUS} R ('very-low-emission-plus') rating.

Specified Times

Apply for normal temperature range of +23°C and 50% relative humidity; higher temperatures shorten and lower temperatures lengthen these times.

Storage

Approx. 12 months, subject to storage on pallet in dry conditions in original unopened containers.

Disposal Considerations

Waste treatment methods. Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force. 91/156/EEC, 91/689/EEC, 94/62/EC and subsequent amendments. Disposal of hardened product (EC waste code) : 17 01 01 Disposal of not hardened product (EC waste code) : 17 01 01 The suggested European waste code is just based on the composition of the product. According to the specific process or application field a different waste code may be necessary.

Safety

Contains Portland cement, calcium oxide, calcium hydroxide, complex mixture of calcium and magnesium silicates and aluminates. Exhibits strong alkaline reaction upon contact with moisture/water; protection required for skin and eyes. Do not ingest. See Sopro Health and Safety Data Sheet for further detailed information. All standard precautions for the handling of construction materials/ chemicals must be taken.

Labelling

Labelling in accordance with Regulation (EC) No 1272/2008 (CLP).

GHS05, GHS07.

Signal word: Danger.

Hazard statements:

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation

Precautionary statements:

P102 Keep out of reach of children.

P261 Avoid breathing dust.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water and soap.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor. P332+P313 If skin irritation occurs: Get medical advice/ attention.

GISCODE (German hazardous substances classification): ZP 1 · Low-chromate to Regulation (EC) No 1907/2006, Annex XVII

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Technical Information

Mixing Ratio	**Mixing ratio 1:4** = 25 kg Sopro Rapidur® B5 : 100 kg 0–8 mm screed sand to DIN EN 12 620 (15 shovelfuls) : 7.5–8.5 ltr water (depending on sand moisture and mortar consistency). w/c ratio 0.30–0.34. **Mixing ratio 1:5** = 25 kg Sopro Rapidur® B5 : 125 kg 0–8 mm screed sand to DIN EN 12 620 (20 shovelfuls) : 9.0–10.0 ltr water (depending on sand moisture and mortar consistency). w/c ratio 0.36–0.40. Particle distribution (grading curve) for aggregate (screed sand) shall fall within A8/B8 range under DIN 1045 Part 2, Annex L, Diagram L.1, and shall exhibit an adequate, though not overly high proportion of fine sand; percentage passing a 0.25 mm sieve: approx. 7–10 %
Mixing	Screed pump or forced action mixer.
Coat Thickness	Maximum and minimum screed thickness depends on incorporated aggregate. Screed should be at least three times and at most ten times as thick as maximum particle diameter of aggregate. Recommended grading of screed aggregate 0–8 mm; coat thickness approx. 25–80 mm.
Pot Life	Approx. 2 - 3 hours[1]. Stiffened mortar must not be retempered by addition of water or fresh mortar to restore workability.
Coverage	MR 1:4 Approx. 4.0 kg/m² per cm thickness MR 1:5 Approx. 3.5 kg/m² per cm thickness
Strength Class	**Mixing Ratio 1:4** CT-C20-F4 after 1 day CT-C35-F5 after 3 days CT-C45-F5 after 5 days CT-C60-F7 after 28 days **Mixing Ratio 1:5** CT-C16-F3 after 1 day CT-C25-F4 after 3 days CT-C30-F4 after 5 days CT-C45-F7 after 28 days
Walkable	After 7-8 hours[1]
Ready to Recieve Floor Covering	For tiling: after approx. 3 days; for impervious coverings: after 3–5 days and after achievement of residual moisture content ≤ 1.8% CM
Application Temperatue	Between +5 °C and max. +25 °C (substrate, air, material)
Floor Heating Systems	Suitable, max. flow temperature +55 °C
Minimum thickness for floor heating systems	25mm pipe cover
Castor Chair Resistance	Suitable (for castors to DIN 68131)
Packaging	25kg bags

[1] Mixing ratio: 1 : 5 (25 kg Rapidur® B5 : 125 kg 0–8 mm screed sand to DIN EN 12 620)

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