weberfloor 4660N Marine Elastic

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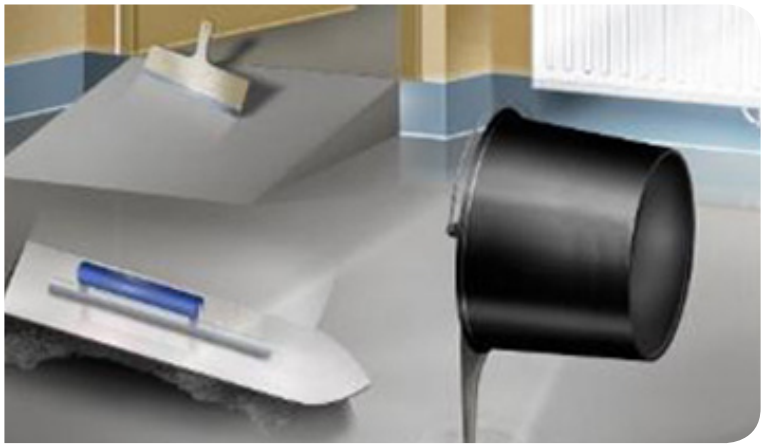

PRODUCT ADVANTAGES

- Pumpable
- High elasticity
- Smooth surface
- Rapid drying and fast setting
- High surface strength

PRODUCT DESCRIPTION

weber.floor 4660N Marine Elastic is a cement-based, pumpable, fibre-reinforced self-levelling material for steel-, galvanised steel- and aluminium decks in layer thicknesses from 4 to 50 mm. The material is supplied as pre-mixed dry powder, water is added on site of construction. The screed can be hand-applied or pumped in towards place of application using a Weber mixer pump, and requires only light mechanical handling with a trowel, spatula or spiked roller to achieve an adequate surface evenness for a floor covering. The material quickly attains a high surface strength and is walkable after 2-3 hours. Final covering after 1-5 days (10 mm per day). Note that the curing time depends on the substrate temperature and the ambient air temperature of the work area as well as the relative humidity. Floor 4660N meets all fire technical requirements as a underlayment for floor covering onboard passenger/merchant vessels and offshore installations according to IMO Res. A.687 (17). For special applications not covered in this product datasheet, please contact Weber for further advice and guidance. Also refer to existing national regulations.

SUBSTRATE

Steel, galvanised steel, aluminium, concrete/cement-based, stone and ceramics and plywood boards. The substrate shall be clean and free from dust, cement rich skin and laitance, grease and oil residues, weak surface layers and other impurities that might prevent adhesion. Laitence of old coatings and contaminants should be removed mechanically, e.g. by shot blasting or flame cleaning). The surface tensile strength of the substrate should be above 1.5 N/mm² (MPa). The substrate temperature should be above +10°C.

PRODUCT SPECIFICATION

DECLARATION OF PERFORMANCE

DoP-SE-013792 001

PR-number: 19691

PROPERTIES		
Material consumption	1 mm = 1,7 kg/m² 5 mm = 8,5 kg/m² 10 mm = 17,0 kg/m²	Material consumption (according to GBR) is third-party controlled by SP Technical Research Institute of Sweden
Application temperature	Minimum +10°C	
Hardening time		
Before foot traffic	2-3 hours	
Before floor covering	1-5 days	10 mm per day
Minimum thickness	4 mm	10 mm with LWA 2/6
Maximum thickness	50 mm	

PROPERTIES		
Water demand	4,75 liter per 25 kg bag	Water content can be reduced for slope building in for example wetrooms
Pot life	Approx. 15-20 minutes	Open time after adding water
Areas of Application		
For internal use	Yes	
For external use	No	
Compressive Strength		
Compressive strength class	C30	EN 13813
28 days	Mean value 33 N/mm^2 (MPa)	EN 13892-2
Flexural Strength		
Flexural strength class	F7	EN 13813
28 days	Mean value 9,5 N/mm^2 (MPa)	EN 13892-2
Shrinkage		
28 days	< 0,5 mm/m	EN 13454-2
Flow		
Water content	4,75 liter per 25 kg bag	19%
Flow rate	220-235 mm	Weber standard (flow ring 68x35 mm)
Flow rate	135-145 mm	SS 923519 (flow ring 50x22 mm)
Surface tensile strength to the substrate	>1,5 N/mm^2 (MPa)	See Weber manual for field measurements
Physical Properties		
Reaction to fire/fire class	A2fl s1	A1301 Primary deck covering, Marine EN 13501-1, IMO FTPC Part 6 and IMO FTPC Annex 2, section 2.2
Chemical Properties		
pH of cured material	Approx. 11	
Fibre	Yes	
Wear Resistance		
Wear resistance against rolling wheel, RWFC class	RWFC 250 (thickness 4-50 mm)	EN 13892-7

PACKAGING

25 kg bags on plastic wrapped pallets (40 bags per pallet)
1000 kg big bags
Bulk (loose material)

STORAGE

When stored in unopened and intact packaging, under dry conditions, shelf-life is min. 12 months from date of manufacture. Incorrect storage could have an adverse impact on the product properties. Older material should be tested, using the stipulated amount of added water to the mix, to ensure that the product properties are intact and the material cures within 1-2 hours after application. Longer setting times indicate that the product properties have been disrupted and the material should not be used. Avoid adding more water than recommended.

PRE-TREATMENT OF SUBSTRATE

The substrate should be mechanically prepared to remove impurities that might prevent adhesion and then vacuum cleaned. The substrate should be primed properly. Floor drains etc. should be protected with lids and separated with stop ends. Steel decks must be primed with weber.floor 4716 Primer diluted 5:1 with 5 parts of primer and 1 part of clean water, applied to the substrate using rubber squeegee, roller, brush or primer pump. Galvanised steel must be primed with Floor 4716 diluted 5:1 with 5 parts of primer and 1 part of clean water, applied to the substrate using rubber squeegee, roller or brush. After application and whilst the primer is still fresh, dry powder must be thoroughly brushed into the primer making a slurry coat on the substrate. After the slurry primer has cured the slurry surface should be primed with a thin coat of Floor 4716 diluted 1:3 with 1 part of primer and 3 parts of clean water. Aluminium decks must be primed with weber.floor 4710N Epoxy Primer, applied to the substrate using a rubber squeegee and roller. After application and whilst the epoxy primer is still fresh, it must be fully blinded with fire-dried quartz sand with grain size 1-2 mm. After the epoxy primer has cured all residual sand should be vacuum cleaned and the sanded surface should be primed with a thin coat of Floor 4716 diluted 1:3 with 1 part of primer and 3 parts of clean water. If another epoxy primer is being used, check for compatibility with Floor 4660N. For details on the primers see separate product datasheets for Floor 4716 and Floor 4710N. The function of the primers is to improve adhesion to the substrate, to prevent air bubbles and de-watering of the screed before hardening.

The temperature in the substrate should be above +10°C for the primer to create a film. For ideal working conditions the ambient air temperature of the work area should be +10-25°C. Light ventilation in the work area is necessary, but windows and openings should be closed sufficiently to avoid draughts during and after application. The dry-mix material should be kept in a heated area before use. Strongly cooled material conveys a risk that certain additives will not be able to dissolve during mixture.
The material can be used in higher ambient air temperatures in the work area up to approx. +40°C. In such conditions the workability of the compound and the flow properties should be observed as too high temperature strongly affects the pot life (open time) of the product, e.g. lead to flow properties changing and premature setting and hardening of the compound. To compensate for too high temperature of the work area and in the substrate it is recommended to cool down the added water with ice and also to restrain from using the material in direct exposure to sunlight. Keep the dry-mix material stored in a ventilated area not exposed for direct sunlight.

Slow drying out due to low temperature and/or poor film formation due to high humidity should be observed as that may result in pinholes in the leveling layer.

MIXING

Floor 4660N should be mixed by adding 4,75 litres of clean water per 25 kg bag (19% of the dry weight of the material). While mixing, the water content should be checked continuously by the flow ring test, see flow rate according to Weber standard in table above. Also ensure that the material is correctly mixed, and that the mixture is homogenous and free from separation. It is important to add the stipulated amount of water as excess water will reduce surface strength, increase shrinkage and encourage segregation. Conversely reduced water content increases viscosity. The temperature of the mix should ideally be between +10°C and 30°C. Once mixed, the compound remains workable for approx. 15-20 minutes under ideal working conditions but no further water should be added. Under too high temperature, the compound remains workable considerably shorter.

MIXING BY HAND

Mixing is done in a larger mixing drum or mixer with room for 3-4 bags of dry material per batch, giving a total volume of 60-80 liters. First pour parts of the water into the mixing drum, then add Floor 4660N. When emptying the bags into the mixing drum, keep it in an underpressure with a vacuum cleaner to reduce dust. Pour in the rest of the mixing water. The material and water should be mixed using a powerful mixer or drill fitted with a paddle or a beater for minimum 2 minutes, until a homogenous, lump-free and low viscosity consistency is achieved.

MIXING WITH LWA

If low weight or a thicker layer is required Floor 4660N can be mixed with LWA. Mix one 50 litre bag of LWA of grain size 2/6 mm with one 25 kg bag of Floor 4660N until a moist soil consistency is achieved using a paddle mixer. Pour water into the mixing unit before adding the dry material. Recommended water content is 4,75 litres (19% of the dry weight of the material), but can vary slightly depending on the moisture content of the LWA. Minimum layer thickness with LWA is 10 mm and covered with a min. 6 mm layer of Floor 4660N.

MIXING BY PUMP

Floor 4660N should ideally be mixed and applied using a Weber approved mixing pump. The water content is set to 19% added water to the mix. **NB!** It is important that the pump is set to the stipulated water content and do not add more water than necessary to achieve a good result.

APPLICATION

The mixed product should be distributed over the surface using a steel trowel, toothed spatula or spiked roller. Floor 4660N should be applied within 24 hours after the primer has cured to ensure proper adhesion.

HAND APPLICATION

For application pour the mixed product into smaller mixing buckets. Start in the farther end of the work area and distribute the mixed screed in parallel with an end wall, finishing by an exit/opening, using a steel trowel, toothed spatula or spike roller to assist the self-levelling process and achieve a smooth surface. If possible, use two mixing buckets to ensure there is always fresh screed available during the application. The half-cured screed can easily be formed and scraped, therefore do not wait too long with necessary fine adjustments. Any fine adjustment after the screed has cured requires advanced grinding equipment.

Material mixed with LWA should be levelled using a straight edge. Compress and smoothen the screed lightly using a steel trowel. If the surface should be overlaid with Floor 4660N within 2-3 days the surface may be primed with Floor 4716, but it is not an absolute requirement.

MACHINE APPLICATION

The screed should be pumped onto the prepared substrate in lengths. Every new length is applied as soon as possible in order for the screed to flow together to create a uniform layer. During application use a steel trowel, toothed spatula or spiked roller to assist the self-levelling process and achieve a smooth surface, and to avoid foam and hose marks. The maximum width of the pumpable area varies from approx. 6-8 metres depending on the capacity of the pump and the layer thickness. Wider areas should be temporarily divided with separate stop-ends. Pumping is carried out in sections as a new section is pumped as quickly as possible slightly on top of the adjacent section. If an extremely levelled floor is required it is important to keep the Pumpable width as small as possible. Floor 4965 is used as temporary stop-ends. Always line up the stop end. Ensure that floor drains, holes etc. are properly sealed off prior to application to avoid clogged drains and pipes. The half-cured screed can easily be formed and scraped, therefore do not wait too long with necessary fine adjustments. Any fine adjustment after the screed has cured requires advanced grinding equipment. The ideal length of the pump hose should be between 40 and 100 metres depending on the type of pump.

AFTER-TREATEMENT

Floor 4660N allows foot traffic after approx. 2-3 hours. Before laying the floor covering it should always be checked that the structure has dried out sufficiently for the chosen type of floor covering. Floor 4660N can be over laid with a floor covering after approx. 1-5 days (10 mm per day) provided the floor covering will withstand minimum 85% RH, comply with the requirements from the floor covering manufacturer. The stated drying time assumes good drying out conditions of +20°C, 50% RH and an exchange of air. The surface can be over laid with stone and ceramics in dry conditions after approx. 4 hours.

The underlayment should not be used without final floor finish. Cover within 7 days. If not possible to cover with final floor finish within 7 days, cover with temporary covering such as plastic foil, waxed paper, geotextile with plastic backing to prevent the screed from drying out too much increasing the risk for shrinkage cracks. Ensure that all overlaps in the covering and floor-to-wall joints are properly sealed off and tight. Floor 4660N is self-drying, and dries out and cures from within. If the surface is not covered in time, moisture that the screed needs internally to cure properly evaporates into the air. The surface may be primed with Floor 4716 diluted 1:8 with 1 part of primer and 8 parts of clean water to prevent the screed from too rapid drying out.

FIELD OF APPLICATION

Floor 4660N is designed for use in marine and offshore installations in light traffic areas, mainly foot traffic, as an underlayment for floor coverings such as PVC, vinyl, linoleum, stone and ceramics, carpets etc. inside. Floor 4660N satisfies the requirements of the authorities and classification bodies for primary deck coverings. Floor 4660N can be used as a bonded screed and as an underlayment screed for use on steel-, galvanised steel- or aluminium decks. It can also be used as a floating screed on top of insulation or applied on existing concrete/cement-based substrates for ship repair purposes. Floor 4660N is designed for application at thicknesses between 4 and 50 mm. When used as a floating screed the minimum layer thickness is 25 mm. If low weight or a thicker layer is required expanded clay aggregates (LWA) of grain size 2/6 mm can be added to the mix. This mixture can be applied in minimum thickness of 10 mm and should be covered with a 6 to 10 mm layer of Floor 4660N to achieve a surface smoothness ready for floor covering, but it is not an absolute requirement for stone and ceramics.

Floor 4660N is designed for use as an underlayment for most types of floor coverings and should not be used without a final floor finish. The floor covering should be applied as soon as the conditions apply. The product should not be used in a humid environment over 95% RH. Any special requirements for the floor covering concerned should be observed, comply with the requirements from the floor covering manufacturer. When the smoothed floor has hardened, and been rubbed down where necessary, it will provide a finished sub-floor for most types of floor covering. If Floor 4660N is not covered within the stipulated drying time, or used as a working platform or transport area during the building process, sufficient cleaning is important to achieve a suitable substrate for the floor covering.

PRACTICAL ADVICE

Tools and machinery should be cleaned for fresh material using water. Hardened material should be removed mechanically. To check that the screed has been installed according to the manufacturer's instructions, it is possible to measure the surface tensile strength. After 28 days curing the value should be > 1,0 N/mm^2 (MPa). Contact Weber for more details. Dehumidifiers should not be used for the first two days after application. Gas heating should not be used prior to priming and application. Please observe that slow drying out due to low temperatures could affect the performance of the material.

SAFETY INSTRUCTIONS

See current Material Safety Data Sheet.

DISCLAIMER

Since there are different conditions and requirements that apply in any case, Saint-Gobain Byggevarer AS cannot be liable for other than the information provided in this product datasheet. Examples of information and conditions beyond Saint-Gobain Byggevarer AS's responsibility (if specially pointed out or not), involves storage, construction, preparation, how the product works together with other products, workmanship and locale conditions. The information provided in this product data sheet is based on our current knowledge and experience about the product. All of the above information must be considered as guidelines. It is the user's responsibility to ensure that the product is suitable for the intended use, and also to perform acceptance check and self-inspection control. The user is responsible if the product is used for purposes other than recommended or for improper installation.

Saint-Gobain Byggevarer AS
Postboks 6211 Etterstad, 0603 Oslo
Tel. 04455
info@weber-norge.no
www.weber-norge.no

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