weberfloor 4680N Marine Light

- Low weight
- Smooth surface
- Pumpable - rapid and ergonomical application
- Rapid drying and fast setting
- Self-levelling

About this product

weberfloor 4680N Marine Light is a lightweight, polymer modified cement-based levelling and fine smoothing compound for steel-, galvanized steel- and aluminum decks in layer thicknesses from 0 to 20 mm. The material is supplied as premixed 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 2-4 hours. Final covering can be laid after 1-3 days. 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. weberfloor 4680 meets all fire technical requirements as an underlayment for floor coverings onboard passenger/merchant vessels and offshore installations according to IMO Res. A.687 (16). For special applications not covered in this product datasheet, please contact Weber for further advice and guidance. Also refer to current national regulations.

Area of use

weberfloor 4680N is designed for use in marine and offshore installations inside in light traffic areas, mainly foot traffic, as an underlayment for floor coverings such as PVC, vinyl, linoleum, stone and ceramics, carpets etc. weberfloor 4680N satisfies the requirements of the authorities and classification bodies for primary deck coverings. weberfloor 4680N can be used as a bonded screed and as an underlayment screed for use on steel-, galvanized steel- or aluminum decks. weberfloor 4680N is designed for application at thicknesses between 0 and 20 mm. weberfloor 4680N is supplied in two versions in order to cope to with ambient conditions and temperatures: Winter version (4680W) for applications in the temperature range +10-25°C, whilst summer version (4680S) for applications in higher temperature range from +25°C and upwards.

weberfloor 4680N 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 subfloor for most floor coverings. If weberfloor 4680N 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.

Product specification	
Material consumption	0,9 kg/mm/m²
Minimum layer thickness	0 mm
Maximum layer thickness	20 mm
Recommended water content	5,2-5,8 litres per 13 kg bag (40-45%)
Application temperature	Minimum 10°C
Pot life (Operating time)	Approx. 15-20 minutes (after adding water)
Curing time for pedestrian traffic	2-4 hours
Compressive strength 28 days	Mean value 21 N/mm² (MPa) EN 13892-2
Flexural strength class	F4 EN 13813
Flexural strength 28 days	Mean value 4,5 N/mm² (MPa) EN 13892-2
Surface tensile strength	> 1,0 N/mm² (MPa)
Shrinkage 28 days	< 0,7 mm/m EN 13454-2
Fire class	A2fl-s1 A1301 Primary deck covering, Marine EN 13501-1, IMO FTPC Part 6 and IMO FTPC Annex 2, section 2.2
Wear resistance to rolling wheel of screed material with floor coverings (RWFC)	RWFC 250 (thickness 10 mm) EN 13892-7
Flow rate according to Weber standard	190-220 mm with Weber standard method 99:03 (flow ring 68x35 mm)
pH	11
Storage conditions	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.
Package	13 kg bags on plastic wrapped pallets. 40 bags per pallet.

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Substrate
Steel, galvanized steel, aluminum, concrete/cement-based, stone and ceramics and plywood boards. The substrate must 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. Laitance 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 1.0 N/mm^2 (MPa). The substrate temperature should be above +10°C.

To know before applying
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.

Pretreatment
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 weberfloor 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. Galvanized steel- and aluminum decks must be primed with weberfloor 4760N/4762N Epoxy Primer, applied to the substrate using a rubber squeegee and roller. After application and whilst the primer is still fresh, it must be sand-scattered completely with fire-dried quartz sand with grain size 1-2 mm. After the primer has cured all residual sand should be vacuum cleaned and the sanded surface should be primed with weberfloor 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 weberfloor 4680N. For details on the primers see separate product datasheets for weberfloor 4716 and weberfloor 4760N/4762N. 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
weberfloor 4680N should be mixed by adding 5,2-5,8 liters of clean water per 13 kg bag (40-45% 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 weberfloor 4680N. 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 BY PUMP
weberfloor 4680N should ideally be mixed and applied using a Weber approved mixing pump. The water content is set to 40-45% 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.

Work instructions
The mixed product should be distributed over the surface using a steel trowel, toothed or flat spatula or spiked roller. weberfloor 4680N 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 or flat spatula or spike roller to assist the 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.

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 or flat spatula or spiked roller to assist the 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 meters 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. weberfloor 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

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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 meters depending on the type of pump.

After-treatment
weberfloor 4680N allows foot traffic after approx. 2-4 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. weberfloor 4680N can be over laid with a floor covering after approx. 1-3 days 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. weberfloor 4680N is self-drying, and dries out and cures from within, which means it quickly attains a surface strength and that surplus water is chemically bonded over time. 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 weberfloor 4716 diluted 1:5 with 1 part of primer and 5 parts of clean water to prevent the screed from too rapid drying out.

Safety regulation
See current Material Safety Data Sheet.

Disclaimer
As there are different conditions at every opportunity, Weber can not be held responsible for anything other than the information provided under the heading "Product Specification". Examples of information and circumstances, which are outside Saint-Gobain (whether specifically stated or not) include storage, construction, processing, interoperability with other products, workmanship and local conditions.

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