

SUBFLOOR PREPARATION GUIDE

Old or new substrates contaminated with oil, grease, fat or chemicals, faulty concrete, inferior grades of concrete, floors with large cracks or crevices, poor asphalt and tiles are not satisfactory bases for a quality job with guarantee. In severe conditions, only remedy may well be to uplift and relay the complete subfloor. Correct subfloor is the one which remains stable and be provided with any necessary expansion, contraction and crack inducement joints. Cracking, unevenness and faults in the substrate will be reflected through the surface treatment and floorcoverings.

SUBSTRATE QUALITY

Before coating or topping, concrete or screeds must:

- have a surface tensile pull-off strength of at least:
 - 0.5 Mpa for carpets, soft floor-coverings and ceramic tiles;
 - 1 Mpa for parquets;
- have following moisture content at 4 cm depth into the concrete depending on type of floor covering to be used:

Types of subfloor	Type of floor covering		
	PVC	Textile	Parquet
Cement screed	4.5%	5%	3%
Anhydrite screed	0.5%	1%	0.5%

To measure water content of concrete use a carbide method moisture tester.

- be free from laitance. Scoring the surface with a screwdriver until the main aggregate is reached will determine the thickness of the laitance. Laitance has relatively poor adhesion; it is friable and weak in comparison to the mass of the aggregate in the mix and can be removed easily using a broad scraper. Vacuum the dust thoroughly.
- be free of all contaminations: residues or spillages of other trades such as plaster, cement, paint, wax, oil, roofing tar should be removed.
 - Plaster and cement can be chipped up and wire brushed.
 - Paints should be mechanically removed
 - Oil, fat and grease are best removed by steam cleaning using a good detergent. As products like oil can penetrate many centimetres into concrete, it is recommended to take cores to determine depth of penetration and make the right choice for surface preparation. In such cases adhesion will be ensured by adequate tests.
- be free of dust from any previous preparation methods. Remove all dust by vacuuming.

WORKING CONDITIONS

During the laying of primers and self levelling compounds a temperature of at least +8°C must be maintained along with a floor temperature of at least +10°C. Avoid draughts that would speed up evaporation and therefore modify products performances and generate premature failure. Absolutely forbid direct sunlight exposure during self-levelling installation. At temperatures over +30°C quick evaporation will result in short working time and sometimes in cracking of self-levelling compounds. To solve such problems we recommend the use of our plasticizer **ADJUVANT FORCE 3** – In total volume of water needed to mix the self levelling reference in use, add one litre pouch of **ADJUVANT FORCE 3** and mix with powder as usual – The additive will reduce excessively rapid drying and bring flexibility to the paste to compensate internal stress.

PREPARATION METHODS ON SPECIFIC SURFACES

Concrete slabs and cement screeds

Absorbent subfloors: using a roller apply undiluted coat of **PRIMASOL R** or **UNIDUR N** (1:1 water-diluted) at a rate of 100 g/m² until full regulation of porosity. Several coats applied at right angles may be necessary.

Normally absorbent or impervious subfloors: using a roller apply undiluted coat of **PRIMASOL R** or **UNIDUR N** at a rate of 90-100 g/m².

Ceramic tiles

Should be checked and re-fixed if necessary. They must be free from residues of paint, wax and grease. Wash with good alkali powder detergent, rinse thoroughly several times if necessary and allow to dry. Then apply primer with a roller to promote adhesion; we recommend water-based epoxy primer (**EPONAL PRIMEPOX** – 100-150 g/m²) for heavy-duty areas or standard water-based primers (**UNIDUR N** or **PRIMASOL R** – 100 g/m²) for residential locations.

Asphalt screeds

Should be rigid/have adequate cohesive strength and be clean. While laying asphalt screed sand should be applied on the surface of the freshly lain asphalt. If it is not so, new asphalt screeds should be shot-blasted. Old asphalt screed should be treated by mechanical planing.

Apply **EPONAL PRIMEPOX** with a roller at a rate of 100 g/m².

Calcium sulphate screeds

On screeds of Anhydrite and Alpha Hemihydrate type, moisture content must not exceed 0,5%. Laitance must be removed by grinding/sanding operation and the dust fully vacuumed off. Several coats (100 g/m²/coat) of **PRIMASOL R** (allow to dry for 2 hours) or **UNIDUR N** (allow to dry for 24 hours) or **IMPREGGLUE** (apply 3 successive coats spaced 30 minutes between each coat) are necessary to create an efficient barrier between plaster-based subfloor and concrete based self-levelling compound.

Curing agents

These products are designed to repel water from entering into the concrete or screed and adhesion will be impaired. Checks should be made to determine their presence; the substrate should be further prepared by grit blasting.

Residues of old adhesives: bituminous, neoprene, acrylic or alcohol-based

Must be tested to verify adhesion to the surface. Scrape away all loose and weakly bonded residues, only 0.5mm of adhesive residues should remain.

Acrylic and neoprene based adhesives: apply **PRIMASOL R** or **UNIDUR N** with a roller at a rate of 100 g/m². **IMPREGGLUE** can also be used but only on traces of acrylic adhesives.

Non-tacky bituminous adhesive and alcohol-based adhesives: apply **PRIMASOL R** or **EPONAL PRIMEPOX** or **IMPREGGLUE** with a roller.

Tacky bituminous adhesives: completely eliminate residues of adhesive by mechanical planing.

Semi-flexible tiles

Must be tested to verify their adhesion, more than 90% of tiles should be firmly bonded to the background. If the floor tiles are easily removable, remove them completely (then see paragraph Residues of old adhesives).

If the tiles are well bonded to the subfloor, remove the residues of cleaning substances and dirt on the surface using good alkali powder detergent; rinse with clean water and allow to dry. Apply **PRIMASOL R** or **UNIDUR N** or **EPONAL PRIMEPOX** (100 g/m²) with a roller and smooth surface using only flexible self-levelling compounds like **ROXOL FLEX**.

Epoxy-based paints

Check the adhesion between the paint and the surface or eventually between the paint and self-levelling compounds. Using a cutting blade trace a small grid with lines spaced few millimetres apart. If paint chips flake away the coating is weakly bonded and should be removed. After grinding/sanding the paint remove any dust or grease with a dry solvent such as methyl ethyl ketone (MEK). After complete drying apply our Primer **EPONAL PRIMEPOX**. If the coating is strong enough (no chips) just wash it, allow a complete drying and apply our Primer **EPONAL PRIMEPOX**.

Old parquet, wooden floors

Must be tested to verify adhesion to the surface. Fix any loose floorboards. Residues of wax, varnish, paint or loose coatings should be removed. Remove dust. Sufficient under-ventilation of wooden floors should be provided. Moisture content of the wood must be between 7 and 13% before applying the primer. Then apply our flexible self-levelling compound.

Two solutions are available:

- For parquet with very tight joints and no gaps (only 1-2 mm between planks allowed):

Use our flexible self-levelling compound **ROXOL FLEX** to fill the gaps between floorboards until level is achieved. Once the self-levelling compound is set for walking (approx. 12 hours), prime the whole surface with **EPONAL PRIMEPOX** or **PRIMASOL R** or **UNIDUR N** (100 g/m²), then smooth surface with a full coat of our flexible self-levelling compound **ROXOL FLEX**.

- All other types of parquet:

Prime with our specific primer and floor filler **EPONAL PRIMABOIS** (0.8-1 kg/m²). It is a multi-purpose product joining capacities of gap filler, parquet primer and damp protective for wood basement from water contained in self-levelling compounds.

Waterproof particle boards, plywood, OSB3

Must be firmly bonded (tongued and grooved) and have good adhesion to the background. Gap size requirements between particle boards and the choice of primers are similar to that of parquet and wooden floors (Caution: UNIDUR N can only be used for waterproof particle board and plywood, it is not suitable for OSB3).

Self-levelling on damp substrates or substrates subject to water seepage

Excess of moisture is very often coming across self-levelling applications and must be solved in short time to avoid delays in building schedule. In cases of hygrometer readings up to 99% of relative humidity (even in areas subject to hydrostatic pressure), of lack or inefficiency of structural damp proof membrane, Bostik has especially designed a 2-component Epoxy Moisture Vapour Barrier coating **EPONAL 376**. It allows early installation of moisture sensitive floorcoverings in fast track building operations, and can be used for new works and renovation.

The mixture is applied in one or two coats (for substrates under hydrostatic pressure) of 400 g/m², the last coat being covered with dry **sand S409** (particle size: 0.4-0.9mm, 3-4 kg/m²) 30 minutes after primer application. The sand is used to promote adhesion of self-levelling compounds which can be applied 24 hours after complete hardening of **EPONAL 376** (for more details consult specific data sheet).

Bostik S.A.

16-32 rue Henri Regnault - 92902 Paris La Défense Cedex - FRANCE
Tel. +33 1 47 96 94 65, Fax +33 1 47 96 90 76
Web site: www.bostik-amer.com
e-mail: infobuario@bostik.com