

MASTERSEAL[®] 381

Single component, solvent based protective and decorative coating for concrete

Description

MASTERSEAL[®] 381 consists of a single component styrene-acrylate resin in a solvent based carrier. It is specially designed as a protective and decorative coating for old and new concrete. It is formulated to give a tough and durable film with excellent adhesion to concrete and resistance to weathering and industrial pollution.

When used in conjunction with MASTERSEAL[®] 380 as a primer, a “dual protective system” is produced - an anti-carbonation coating which will also protect concrete against damage by water borne salts, such as chlorides or sulphates.

Primary uses

- Protective treatment to old and new concrete.
- Aesthetic finish to patch-repaired concrete to give uniform pleasing appearance.
- Early application to concrete surfaces to prevent ingress of aggressive substances into immature concrete.
- Anti-carbonation, anti-chloride dual purpose system to concrete structures in extreme conditions of attack.

Advantages

- One component, ready to use material.
- Easy to apply by brush, roller or spray.
- Protects and decorates.
- Tough, durable, flexible system.
- Moisture vapour permeable, allows concrete to “breathe”.
- Anti-carbonation coating with protection against chloride ingress. When used with

MASTERSEAL[®] 380 primer provides protection against extreme conditions.

- Smooth matt coating - a dry coating thickness of 120 microns provides barrier properties to pollutant gases as 1 metre of concrete.

Packaging

MASTERSEAL[®] 381 is supplied in 20 litre units.

*Typical properties

Appearance:	Thixotropic liquid
Specific gravity:	1.02 at 25°C
CO ₂ diffusion resistance at 80 micron DFT	Equivalent air layer thickness : R > 70m Equivalent concrete thickness Sc = 177mm
Recoat time:	Overnight drying (16 hours at 20°C)

Standards

Carbon Dioxide Diffusion Resistance
Water Vapour Transmission Rate

Guide to application

Proper application is essential to the successful use of surface treatments for the protection of reinforced concrete. In many situations the cost of access to carry out the work is a significant proportion of the total cost. It is therefore cost-efficient to spend time and care in application to ensure a durable long lasting finish.

Surface preparation:

Proper surface treatment cannot be over-emphasised. Good surface bonding can only be achieved if the concrete surface is clean and mechanically sound. MASTERSEAL[®] 381 will accommodate a degree of surface moisture and



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can be applied to damp concrete. If used with MASTERSEAL[®] 380 primer as the "Dual Purpose System" the concrete must be dry.

Surface preparation must provide not only a sound surface and a good key but also the right surface texture.

Grit blasting is perhaps the most effective method of cleaning a concrete surface.

Environmental considerations might preclude the use of dry blasting unless a vacuum removal system is used to remove all grit and debris.

Mechanical wire brushing can be used but is the least effective method. Bush hammering is not suitable. Needle gun treatment produces an effective finish but will texture the surface.

All dry mechanical methods are dusty operations. Face masks and adequate ventilation are necessary.

Wet blasting is effective if soiling is heavy and large areas involved.

After mechanical abrasion all surfaces should be cleaned of all loose material by blowing off with dry, oil free, compressed air.

If water has been used it is necessary to allow the concrete to dry sufficiently.

New concrete:

All traces of mould oils or curing membranes must be removed. Surface laitance must be removed if of a weak, fragile nature.

Old concrete:

Surfaces can be contaminated with dirt, salts, industrial pollutants and organic growth.

Weathering, particularly frost, can produce a loose and fragile surface. Other contaminants such as paint, oil and grease may also be present. All these must be removed to obtain a clean and mechanically sound surface.

Removal of contaminants:

The mechanical means described above will deal with most contaminants, including paints and previous coatings. Paint strippers and solvents are not recommended. Steam cleaning will remove oils and greases which have not penetrated too deeply, especially when used in conjunction with a suitable detergent solution (2% solution of a non-ionic detergent in water). Care must be exercised when using detergents avoiding over application or concentration of detergent. Subsequent removal can prove difficult and can impair bond of the following treatment, especially water repellents.

Surface uniformity:

Fins and protrusions should be removed mechanically and any remaining should not be higher than 1mm on the finished surface. Cracks, blowholes and surface blemishes should be filled using EMACO R303 fairing coat, cosmetic mortar. Larger holes should be treated by the use of EMACO R101. It must be accepted that all "thin-film" surface treatments will not mask all the differences in the surface texture of concrete. Only high build systems can achieve this.

Mixing:

Primer: If MASTERSEAL[®] 380 is to be used as a primer, the material can be used straight from the container.

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Coating:

MASTERSEAL[®] 381 should be thoroughly mixed before use.

Application:

MASTERSEAL[®] 381 should be applied evenly to the concrete surface by airless spray brush or roller. If MASTERSEAL[®] 380 primer has been used, application of MASTERSEAL[®] 381 should commence as soon as the primary coat has completely dried, minimum 24 hours.

Two coats are recommended with an interval of not less than 16 hours between treatments. The second coat should be applied at right angles to the first. When using an airless spray MASTERSEAL[®] 381 should be thinned with 3% by weight of White Spirit.

Coverage

Coverage rates are approximate and will depend upon the texture of the surface to be treated.

Priming: MASTERSEAL[®] 380 - 3-6m² / litre / coat (one coat only)

Coating: MASTERSEAL[®] 381 - 9m² / litre / coat (two coats minimum recommended).

For spray applications the use of SOLVENT NO. 2 may be required up to a maximum level of 5%.

Equipment care

All equipment should be cleaned immediately after use with White Spirit.

Storage

Store under cover out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air conditioned environment.

A minimum of 1 year when stored away from direct heat in cool, dry conditions. Avoid sources of ignition.

Safety precautions

Request and refer to Material Safety Data Sheet.

Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

Quality and care

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

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* Properties listed are based on laboratory controlled tests.

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