

METASET[®] RESIFILLA

Rapid Cure, High Performance Non-Structural Repair & Levelling Compounds

Product Description

METASET[®] ResiFilla are high performance, polymeric fill / repair compounds based on our advanced proprietary ESSELAC[®] resin technology and extensive experience in the development of high performance repair materials for the construction industry. They rapidly develop full compressive strength, even at low temperatures. METASET[®] ResiFilla are CE Marked under EN1504-3, meeting all the criteria of Class R2 products, and exceeding most properties of Class R4. A Declaration of Performance is available upon request.

Product Uses

METASET[®] ResiFilla compounds are designed for making good small non-structural repairs and the smoothing of surface damage and cracks in substrates such as concrete and stone. Whilst they demonstrate excellent strength, resilience and longevity, they are not designed for use as a “structural” repair material, nor for extensive levelling or deep profile reinstatement for which other GCP Applied Technologies products are more suited.

METASET[®] ResiFilla Vertical

A medium strength, anti-slump material for use on vertical substrates. It can be applied up to 15mm thick per coat on steeply inclined or vertical substrates.

METASET[®] ResiFilla Horizontal

A medium strength, multipurpose material used for the levelling, repair and smoothing of damaged or deeply textured horizontal surfaces e.g. making good "sound" but uneven concrete before the application of a waterproofing membrane. It can also be used for the aesthetic patching, infilling and joining of concrete beams, or overlaying concrete for local protection against chemical attack, impact and wear etc. METASET[®] ResiFilla is typically extended with coarse aggregates for use at depths over 10mm.

The METASET[®] ResiFilla range can be used in most situations where the minimum delay and disruption is of the utmost importance, including areas such as:

- Concrete roads and ramps
- Bridge and car park decks
- Driveways and pavements
- Loading bays and warehouses
- Floor Maintenance
- Cold stores
- Airport runways and aprons
- Raising and grouting manhole covers and bedding of street furniture

Features

- Rapid cure to full strength: 1 to 2 hours across a wide temperature range down to 0°C. Special grades can be supplied to enable curing down to -20°C.
- Can be mechanically loaded after 1-4 hours¹, minimising disruption and maximising site productivity

¹Time taken will depend on ambient temperature

²Assumes the correct grade is being used. METASET® ResiFilla Vertical can be supplied in a tropical grade while METASET® ResiFilla Horizontal is supplied in winter, summer and tropical grades to allow an adequate working life across a wide range of temperatures for both products. The winter grade is automatically supplied in the UK between October and March. The tropical grade is for tropical climates. For temperatures outside this application range please contact our Technical Services Department for further information prior to ordering.

- Excellent resistance to CO₂, chlorides, UV, ageing and weathering
- High compressive and flexural strength
- Excellent bond to many construction materials
- High impact and shock resistance
- Resistant to many acids and alkalis up to 25% concentration. Impervious to water, brine, grease, oil and cleaning solutions

Technical Data

PROPERTY	VALUE
Application Temperature Range ²	0 to 30°C
Typical Working Life	
30°C (86°F)	8 minutes
20°C (68°F)	15 minutes
10°C (50°F)	20 minutes
0°C (32°F)	40 minutes
Typical Hardening Time	
30°C (86°F)	20 minutes
20°C (68°F)	40 minutes
10°C (50°F)	60 minutes
0°C (32°F)	100 minutes
Specific Gravity	2.1
Compressive Strength (EN 12190)	50MPa
Elastic Modulus (EN 13412)	7GPa

Minimum Thickness per Layer	2mm
Maximum Thickness per Layer	25mm (for areas up to 1.0m ²) 50mm (for areas up to 0.5m ²)

Surface Preparation

It should be stressed that the better the surface preparation, the better the repair bond. All substrates must be clean, dry and structurally sound. All preparation must ensure the complete removal of all substances that are detrimental to the bond such as but not limited to, laitance, dust, dirt, oils, fat, waxes and chemical contaminants.

Concrete

New concrete should be a minimum of seven days old.

If additives, cement replacement or curing agents have been used please contact our Technical Services Department.

All concrete surfaces must be prepared by suitable mechanical means³ such as vacuum blasting, scabbling etc. All laitance should be removed so that the aggregate in the deck is visible.

Oil and grease can be removed by scouring using a water-soluble de-greaser. If acid etching is used care should be taken to ensure that the resulting residues are completely removed.

Steel

Steel substrates should be prepared to provide a Sa 2.5 finish. They must be clean, dry, and free from corrosion products. They should preferably be roughened by shot blasting or grinding. Prior to any blast cleaning the surface must be thoroughly de-greased. Within four hours of blast cleaning the steel substrate must be primed to prevent deterioration.

Asphalt

For effective repairs to defects in asphalt surfaces, METASET[®] ResiFilla is complemented by GCP's proprietary SAFETRACK[®] Highway Maintenance products, which include Crack Infill, Emergency Patching Mortar, Inlaid Road Repair and Overbanding.

Application

Primer

Concrete substrates must be primed using either PAR1 or PA1 primer.

Steel substrates must be primed with ZED S94 primer immediately after blast cleaning.

The relevant primer must be allowed to cure before application of any METASET[®] ResiFilla grade commences. Please refer to the relevant primer datasheet for further information.

METASET® ResiFilla Vertical

Consists of a pre-packed binder resin, powder catalyst (BPO) and specially graded fillers in a bag. All three components are supplied pre-measured and packed into a plastic pail for on-site whole pack mixing. METASET® ResiFilla Vertical should not be extended with aggregate.

Coverage: 2.1 kg/m²/mm depth.

METASET® ResiFilla Horizontal

Consists of a pre-packed binder resin, powder catalyst (BPO) and specially graded fillers in a bag. All three components are supplied pre-measured. The product can also be extended with aggregate for deeper repairs, as per the addition levels shown in the Table below. The aggregate should be rounded rather than angular and graded, such as pea gravel. It must also be clean and dry. The mix fluidity and workability can vary with aggregate type. The depth of the repair will determine the quantity of aggregate required but the minimum installed thickness of aggregate-extended material is three times the diameter of the largest aggregate particle.

Area of Repair

METASET® ResiFilla Horizontal should not be installed in single applications to areas greater than 1m² at a maximum thickness of 25mm, or a maximum area of 0.5m² for thicknesses up to 50mm. Should the repair be larger than these, the area should be marked-off in bays each of no more than 1m² or 0.5m², and the material laid where possible in a checker board pattern. Straight and smooth saw-cut edges should be avoided; jack-hammered edges, ideally slightly undercut, will provide a mechanical key to enhance the bond to the parent material.

³ Water Jetting is not an acceptable method of mechanical preparation.

METASET® ResiFilla Horizontal

DEPTH OF REPAIR & COVERAGE

<10mm	<p>No aggregate required.</p> <p>A 23.3kg kit yields approximately 11 litres of mortar*.</p> <p>Maximum area in single lift @ <10mm is 1m².</p>
10-20mm	<p>Add 10kg of 1-3mm aggregate.</p> <p>A 23.3kg kit with aggregate yields approximately 16 litres of mortar*.</p> <p>Maximum area in single lift @ 11-20mm thickness is 1m².</p>
20-50mm	<p>Add 20kg of 3-6mm aggregate.</p> <p>A 23.3kg kit with aggregate yields approximately 20 litres of mortar*.</p> <p>Maximum area in single lift @ 21-50mm thickness is 0.5m²</p>

*Exact yield is dependent on the bulk density of the aggregate.

Mixing

Ensure the substrate is prepared, clean and dust-free before starting the mixing operation.

A 20ltr bucket is an ideal mixing vessel. Ensure the vessel is clean and large enough to contain the pack size being mixed. Do not split kits.

Shake the container of resin thoroughly and then pour it into the mixing vessel. Using a mechanical mixer, such as an air-driven drill (400–800rpm) or an intrinsically-safe electric drill and mixing paddle, start to stir the resin. Whilst continuing to stir, add the BPO and mix for a few seconds. This initiates the “working life” during which time the material must be used. So, without stopping, add the bag of fillers and mix thoroughly until all the fillers are wetted out. Note: If a METASET® ResiFilla Horizontal mix is being extended with aggregates, they should be added to the mix at the same time as the fillers.

The mixed material must be placed and finished during the working life. Towards the end of the working life polymerisation starts, the viscosity increases i.e. it becomes stiffer, the temperature rises and the material starts to gel. Do not try to place or work the material at this stage.

Synthetic resin materials cannot be ‘brought back’ by adding more liquid.

Placing

METASET® ResiFilla Vertical should be applied by tamping and trowelling to the desired profile in layers of up to 15mm thick. Each layer should be allowed to cure before over coating. The final layer should be trowelled to a smooth finish.

METASET® ResiFilla Horizontal should be applied by pouring and then trowelling. Distribute evenly at the prescribed thickness then trowel to a smooth finish. The material is self-smoothing so it requires a minimum amount of compaction, but it is advantageous to run a steel float or trowel over the surface to assist the placing and help release air trapped during mixing.

For subsequent layers, care should be taken to ensure that the previously-applied material is either still wet or completely hard. Never add new material to old material that is in its gelling or semi-cured state, otherwise delamination of the two layers could result. Do not exceed the maximum thickness.

Do not continue to trowel once the surface has started to skin.

Limitations

The cure of METASET® ResiFilla may be inhibited by the presence of phenols. Continuous exposure to harsh chemicals and fluids is not recommended. It is not resistant to some aggressive organic solvents. Advice on specific chemical resistance can be offered on request.

Colours

METASET® is supplied in buff as standard. Pigment Powder can be supplied for on-site addition if required.

Coverage

- Primer: Refer to separate datasheet
- METASET® ResiFilla: See grade details above

Cleaning

All tools and equipment should be cleaned with acetone before the material is allowed to cure.

Packaging & Storage

METASET® ResiFilla is supplied in the following pack sizes:

- METASET® ResiFilla Vertical: 17.5kg kit
- METASET® ResiFilla Horizontal 23.3kg kit

All components of the METASET® ResiFilla range should be stored in cool, dry, protected conditions out of direct sunlight and in accordance with the relevant Health & Safety regulations. Storage temperature must not exceed 25 °C. Do not store near naked flames or foodstuffs.

The fillers and aggregates used with the system must be kept dry at all times.

Stored in unopened containers, under the correct conditions, the components have a minimum shelf life of six months. If your product is more than six months old you must contact GCP before use.

Health & Safety

Please refer to our safety datasheets for further information.

General Information

METASET® ResiFilla is part of a wide range of specialist waterproofing, surfacing and repair materials manufactured and supplied by GCP. If you require any further information on this or any other of our products, please do not hesitate to contact us or visit www.gcpat.com.



Certificate Number 15174
ISO 9001, ISO 14001

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gcpat.uk/solutions/products/metaset-resifilla-concrete-leveling-repair-and-smoothing-system/resifilla