# grouting

- Masterflow 400
- Masterflow 410
- Masterflow 505
- Masterflow 515
- Masterflow 931

# FLOWCABLE 50 P

**( Replaces Atrogrout )**

**Expanding plasticising admixture for cement, grout and concrete**

## Description

FLOWCABLE 50 P is an expansion system which compensates for plastic shrinkage and settlement in cementitious grouts. Supplied in powder form, FLOWCABLE 50 P produces controlled expansion in cement grouts and maintains high water retention. It contains a water-reducing agent which increases the workability of the mix with a reduced water content, making a stronger grout. Full expansion is achieved before initial setting occurs resulting in a high degree of interfacial contact.

## Applications

For bedding, jointing, duct grouting and void filling applications where the following characteristics are beneficial:-

- A cement plasticising and water reducing agent to improve the free flowing properties of the grout at low water/cement ratios.
- An expanding agent that increases the volume of the grout which in turn eliminates shrinkage and settlement.
- A catalyst to control the rate of expansion and to ensure full expansion of the grout.

(For precision grouting and load bearing operations use MASTERFLOW grouts.)

## Packaging

FLOWCABLE 50 P is available in 0.5 and 20 kg bags.

## Properties*

* Properties listed are only for guidance and are not a guarantee of performance.

| | |
|---|---|
| Colour: | Brown/grey powder |
| Chloride content: | Nil to BS 5075 : 1982 |
| Nitrate content: | Nil |
| Freezing point: | n/a |
| Flash point: | None |
| Dosage: | 500gm/100kg cement |

## Standards

FIP RILEM Joint Committee on Grouting Report.

## Expanding properties

The expansion of grouts containing FLOWCABLE 50 P is sufficient to overcome normal settlement without producing undue pressure against the sides of the duct. The grout therefore forms a firm and uniform bond to the concrete and to the steel along the length of the tendon, and at the same time provides good protection for the cable. The expansion obtained by the use of FLOWCABLE 50 P reaches a maximum within 1 - 2½ hours of mixing under average temperature conditions. After this period no settlement occurs, and the grout retains its maximum expansion. FLOWCABLE 50 P produces a maximum expansion of 3.25% in a neat cement grout, and 2% expansion in a 1:1 sand/cement grout.

**Plasticising properties:**

FLOWCABLE 50 P imparts fluidity to grout, even at reduced water/cement ratios, and because of the water reducing action, higher compressive strengths are obtained.

Table 1:
Compressive strength (N/mm²) after 7 days

| | Neat cement grout | Sand/cement grout 1:1 |
|---|---|---|
| Control | 27.0 | 21.8 |
| FLOWCABLE 50 P | 29.2 | 24.3 |

## Directions for use

First add the water to the mixer and then the Portland cement, mix thoroughly until the cement has been completely dispersed. Then add the FLOWCABLE 50 P and sand (if any is being used), and continue mixing a further 2 minutes or until complete dispersion of the FLOWCABLE 50 P is achieved.

The type of mixing equipment generally used in preparing cement grouts is that which will produce a high local turbulence thus ensuring an efficient breakdown and dispersion of the cement.

Grouts for ducts of post-tensioned concrete members should be passed through a 1.18mm BS sieve before reaching the pump, and the pump should be capable of giving a continuous flow of grout to the injection equipment.

## Dosage

FLOWCABLE 50 P is used at the rate of 500gm per 100kg cement in the grout, and can be used either with ordinary Portland cement or Rapid Hardening Portland cement. During the winter months when temperatures may fall to between 7°C and 1°C, it is recommended that Rapid Hardening Portland cement should be used in grouts for filling the ducts of post-tensioned concrete members.

**Recommended grout specifications for grouting ducts of post-tensioned concrete members:**

| | |
|---|---|
| **1. Neat cement grout:** | |
| Ordinary Portland cement: | 100kg |
| FLOWCABLE 50 P: | 500gms |
| Water: | Not more than 50 litres |
| **2. Cement sand grout** | |
| Ordinary Portland cement: | 100kg |
| Sharp graded sand (passing 1.18mm mesh sieve) | 100kg |
| FLOWCABLE 50 P: | 500gms |
| Water: | Not more than 54 litres |

## Specification clause

FLOWCABLE 50 P, manufactured by Degussa, or similar approved, is to be incorporated in grouts where indicated.
The FLOWCABLE 50 P shall be added at the rate of 500gm per 100kg Portland cement and used strictly in accordance with the manufacturer's recommendations.

REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** GROUTS PRIOR TO USE

## Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with the eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use.

## Storage

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Degussa's Technical Services Department. Shelf life is 1 year when stored as above.

## Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local Degussa representative.
Degussa reserves the right to have the true cause of any difficulty determined by accepted test methods.

## Quality

All products produced by Degussa certified manufacturing facilities, are produced to conform to systems designed to meet internationally recognised quality standards.

06/2005 Degussa-IR

# MASTERFLOW® 931

**(Formerly Grout Mortar 2000)**

**Very high strength, non-shrink ready to use mortar**

## Description

MASTERFLOW 931 is formulated to be used in applications where high compressive strength is prime goal such as installation of heavy machineries with high vibrations.

## Applications

MASTERFLOW 931 is ready to use mortar with all necessary additives, only on-site addition of water is required to prepare smooth mortar. For all grouting, anchoring or injection purposes the inter surfaces should be cleaned and pre-wetted and then the mixed mortar should be placed or injected.

## Packaging

MASTERFLOW 931 is supplied in 25kg bags.

## Mortar preparation

Measure the required amount of water and then add the MASTERFLOW 931 slowly and mix it continuously to reach homogeneous and flowable mortar. Avoid long and fast mixing.

## Typical properties*

Properties listed are only for guidance and are not a guarantee of performance.

| Appearance | Cementitious powder |
|---|---|
| Specific gravity | Approx. 1.4kg / litre |
| Segregation | Nil |
| Bleeding water | Nil |

| MASTERFLOW 931 | Water | Slump Cm | Compressive strength ( kg/cm2 ) | | | Tensile strength (kn) 28 days |
|---|---|---|---|---|---|---|
| | | | 3 days | 7 days | 28 days | |
| 1 kg | 180gr | 8.5 | - | 509 | 708 | 695 |
| 1 kg | 210gr | 18 | 319 | 474 | 575 | 565 |

## Composition

MASTERFLOW 931 is formulated as follows:

- Portland Cement Type II
- Very fine and micronised silica fume
- Special controlled aggregates
- Expansion agent
- Superplasticiser in powder form
- Chemical additives

## Curing

As the water consumption is at minimum rate ( 4.5 – 5.25 liters per a 25 kg bag ) curing is essential in order to avoid surface cracking . In moderate temperatures curing should be continued for 3 days .

## Consumption

25kg bag approx. 13 litres or 78 x 25kg bags per cubic meter.

## Storage

Should be stored in original bags and protected from excessive compaction, direct sunlight and rainfall, in this situation the shelf life exceed 12 months.

## Note

In case of any wide applications, please contact your local Degussa representative.

## Quality

All products produced by Degussa certified manufacturing facilities, are produced to conform to systems designed to meet internationally recognised quality standards.

04/2006 Degussa-IR

REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** GROUTS PRIOR TO USE

# MASTERFLOW® 400

**High strength, free flowing epoxy grout**

## Description

MASTERFLOW 400 is a solvent free epoxy resin grout formulated to withstand static and dynamic loads in a wide variety of applications.

MASTERFLOW 400 is suitable for an application thickness range of 10-80mm. The product is three component and easily mixed on site, to a pourable consistency.

## Typical applications

- Crane and transporter rails.
- New and old machine base plates.
- Structural filling of holes and cavities in concrete.
- Industrial equipment and machinery subject to static or dynamic forces.
- Equipment where chemical and acid spillage occurs.

## Advantages

- No priming required.
- Excellent flow characteristics.
- Long pot-life.
- High tensile, flexural and compressive strength.
- Excellent adhesion to steel and concrete.
- Rapid installation and strength gain.
- High resistance to dynamic loads and chemical attack.
- Non-shrink and tolerant of damp surfaces.

## Packaging / yield

MASTERFLOW 400 is supplied in 15kg, which yields 7.5 litres.

## Typical properties*

* Properties listed are only for guidance and are not a guarantee of performance.

| | | |
|---|---|---|
| Pot life: | at 25°C | 70 min |
| | at 40°C | 40 min |
| Compressive strength (ASTM C579-91): | 7 days | 104 N/mm² |
| Flexural strength (BS 6319 Part 3 1983): | 7 days | 27.5N/mm² |
| Tensile strength (BS 6319 Part 7): | 7 days | 15 N/mm² |
| Density: | | 2000 kg/m³ |
| Cure: | at 25°C | 7 Days |
| | at 40°C | 3 Days |
| Co-efficient of thermal expansion (ASTM C531-95): | | 8 x $10^{-5}$/°C |
| Secant modulus of elasticity (ASTM C580-93): | 28 days | 9300N/mm² |

**Placing:**

Place immediately after mixing, into the prepared area in such a manner that it has the shortest distance to flow. For long pours a suitable head of pressure may be required. Ensure the area to be grouted is **not** completely sealed, and any displaced air can be expelled. Pour continuously from one side only.

Allow the grout to set prior to removal of formwork (normally after 6 hours). Where placement exceeds depths of 80mm, application should be carried out in layers. The second layer to be applied after 6 hours.

## Equipment care

Clean all equipment promptly with CLEANING SOLVENT NO. 2. Any excess cured material will have to be mechanically removed.

## 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. Shelf life is up to one year when stored in unopened containers as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Degussa's Technical Services Department.

## Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product is fully cured or dried). Treat splashes to skin and eyes immediately. If accidentally ingested, seek medical attention.

Reseal containers after use. For specific storage and disposal instructions refer to the Material Safety Data Sheet.

## Note

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

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

## Quality

All products produced by Degussa certified manufacturing facilities, are produced to conform to systems designed to meet internationally recognised quality standards.

REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** EPOXY GROUTS PRIOR TO USE

11/2003 Degussa-IR

# MASTERFLOW® 410

**High strength, free flowing epoxy grout**

## Description

MASTERFLOW 410 is a solvent free epoxy resin grout formulated to withstand static and dynamic loads in a wide variety of applications. The product is three component and easily mixed on site to a pourable consistency. MASTERFLOW 410 is suitable for an application thickness range of 40-120mm where high flow characteristics are required. Thickness may be reduced to 20mm when flow is not required.

## Typical applications

- Anchors and fixing bolts
- Crane and transporter rails.
- New and old machine base plates.
- Structural filling of holes and cavities in concrete.
- Industrial equipment and machinery subject to static or dynamic forces.
- Equipment where chemical and acid spillage occurs.
- Pile cap waterproofing (at ≥20mm thickness)

## Advantages

- No priming required.
- High tensile, flexural and compressive strength.
- Excellent adhesion to steel and concrete.
- Rapid installation and strength gain to ensure early commissioning of equipment.
- Excellent fatigue resistance.
- Compatibility with equipment subject to extensive thermal movement.
- High resistance to dynamic loads and chemical attack.
- Non-shrink and tolerant of damp surfaces.

## Typical properties*

* Properties listed are only for guidance and are not a guarantee of performance.

| | | |
|---|---|---|
| Pot life: | at 25°C | 70 min |
| | at 40°C | 40 min |
| Compressive strength BS 6319 Part 2: | 24 hrs | 88 N/mm² |
| | 3 days | 92 N/mm² |
| | 7 days | 96 N/mm² |
| Flexural strength BS 6319 Part 3: | | 25 N/mm² |
| Tensile strength BS 6319 Part 7: | | 13 N/mm² |
| Density: | | 2175kg/m³ |
| Cure: | at 25°C | 7 Days |
| | at 40°C | 3 Days |

## Packaging / yield

MASTERFLOW 410 is supplied in 15kg and 30kg units, which yield approximately 7 and 14 litres respectively.

## Composition

Bisphenol A epoxy resin base, a low viscosity liquid reactor which when mixed with the inert aggregate forms an easily pourable and mobile grout.

## Chemical resistance

The resistance of MASTERFLOW 410 to most common corrosive chemicals is excellent:

- Dilute and concentrated alkalis
- Most dilute acids
- Oil and petrol
- Ammonia
- Formaldehyde
- Saline solutions
- Mineral oil, vegetable and animal fats

## Application procedure

**Surface preparation:**

As with all epoxy resin applications the quality of surface preparation has a direct effect on the performance and durability of the system. Concrete surfaces should be sound, dimensionally stable, clean, free from laitance, paint, oil, grease, mould release agent and residual curing compound. Metal surfaces or components to be bedded, should be free from any rust or scaling. Formwork, if used, should be wrapped in polythene to ensure a clean release.

**Mixing:**

**Do not split packs** or alter the ratio of resin components in any way. Mix with a slow speed drill and paddle. Add the contents of the reactor container to the base component in a suitable mixing vessel, ensuring complete transfer of both resin components.

Mix for one minute before slowly adding the aggregate and continue mixing until a flowing, pourable consistency is achieved. Do not overmix as that may entrain air.

**Placing:**

Place immediately after mixing, into the prepared area in such a manner that it has the shortest distance to flow. For longer pours a suitable head of pressure may be required. Ensure the area to be grouted is **not** completely sealed, and any displaced air can be expelled. Pour continuously from one end only.

Allow the grout to set prior to removal of formwork (normally after 6 hours). Where placement exceeds depths of 120mm, application should be carried out in layers. The second layer to be applied after 6 hours.

## Limitations

Do not apply MASTERFLOW 410 when the contact surfaces are less than 10°C. If the ambient temperature is less than 10°C then artificial heating may be used.

## Equipment care

Clean all equipment promptly with CLEANING SOLVENT NO. 2. Any excess cured material will have to be mechanically removed.

## 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. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Degussa's Technical Services Department.

## Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product is fully cured or dried). Treat splashes to skin and eyes immediately. If accidentally ingested, seek medical attention. Reseal containers after use. For specific storage and disposal instructions refer to the Material Safety Data Sheet.

## Note

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## Quality

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REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** EPOXY GROUTS PRIOR TO USE

# MASTERFLOW® 505

**(Formerly Grout mortar 505)**

**High strength, non shrink cementitious construction grout**

## Description

MASTERFLOW 505 is a ready to use product in powder form, which requires only the on-site addition of water to produce a non shrink grout of predictable performance.

## Applications

MASTERFLOW 505 is formulated for use at plastic or flowable consistency, and may be used with confidence for bedding, grouting and void filling operations.

## Advantages

- Non shrink.
- Adjustable consistency.
- Proven and predictable performance.
- High bond strength to steel and concrete.
- Early strength development even at flowable consistency.
- Impermeable.

## Packaging

MASTERFLOW 505 is supplied in 25kg bags.

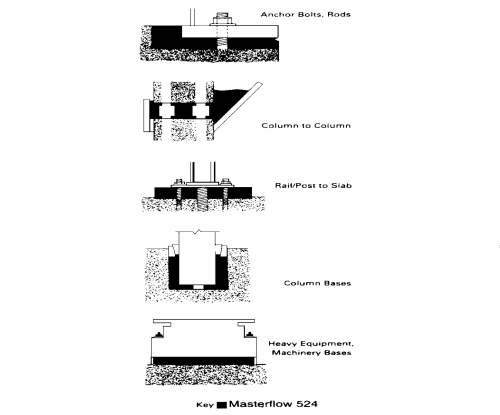
## Typical properties*

* Properties listed are only for guidance and are not a guarantee of performance.

| | | |
|---|---|---|
| Water addition | Flowable | 4.00 ltrs / 25 kg |
| | Plastic | 3.50 ltrs / 25 kg |
| Density | Flowable | 2230 kg / m³ |
| | Plastic | 2350 kg / m³ |
| Free expansion: | | 2 - 4 % |
| Restrained expansion: | | 0 - 0.4 % |

| Compressive Strength N/mm² ASTM C-109: | Plastic |
|---|---|
| 1 day | 26.00 |
| 3 day | 38.00 |
| 28 day | 56.00 |
| Flexural Strength N/mm² BS 6319 Part 3: | Flowable |
| 28 day | 6.95 |
| Tensile Strength N/mm² BS 6319 Part 7: | Flowable |
| 28 day | 4.04 |
| Water penetration DIN 1048 Part 5: | < 10 mm |

## Typical applications



## Application procedure

**Preparation:**

The surface onto which the grout is to be applied should be scabbled to remove laitance and expose aggregate. Do not use bush hammers or similar preparation equipment that can crush the aggregate but leave it in place.
The surface must be free of oil, dust, dirt, paint, curing compounds or other contaminants that could impair adhesion. Soak area to be grouted to minimise absorption. Surfaces should be damp but free of standing water. Particular attention should be paid to bolt holes to ensure that these are water-free. Use oil free compressed air to blow out bolt holes and pockets as necessary.
Base plates, bolts, etc. must be clean and free of oil, grease and paint. Set and align equipment. If shims are to be removed after the grout has set, then lightly grease them for easy removal.
Ensure formwork is secure and watertight to prevent movement and leaking during the placing and curing of the grout.

**Mixing:**

Damp down the inside of the grout mixer with water prior to mixing the initial batch of MASTERFLOW 505. Ensure the mixer is damp but free of standing water. Add the pre-measured quantity of water. Slowly add the MASTERFLOW 505, mixing continuously. Mix for 3-5 minutes until a smooth, uniform, lump free consistency is achieved.

**Placing:**

Place immediately after mixing, into the prepared area in such a manner that the grout has the shortest distance to flow. Pour the grout continuously maintaining a constant hydrostatic head wherever possible.
MASTERFLOW grouts are suitable for use with most types of pumping equipment.
Immediately after MASTERFLOW 505 grout is placed, cover all exposed grout with clean wet hessian and keep moist until grout surface is ready to be finished, or until final set.
Alternatively, consider the use of a curing membrane from the MASTERKURE range.

## Storage

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Storage life is approximately 12 months when stored in ideal conditions in original sealed bags.

## Precautions

The temperature of both the grout and elements coming into contact with the grout should be in the range of +5°C to +35°C. Do not use water in an amount or at a temperature that will produce a consistency more than flowable or cause mixed grout to bleed or segregate.
MASTERFLOW 505 should be laid at a minimum thickness of 10mm and to a maximum depth of 80mm.
For applications above 80mm consider the use of MASTERFLOW 980 T. For applications below 10mm consult Degussa Technical Services Department for advice.
***DO NOT OVERWORK AND AVOID USING MECHANICAL VIBRATION.***
***UNDER NO CIRCUMSTANCES SHOULD MASTERFLOW 505 BE RETEMPERED BY THE LATER ADDITION OF WATER.***

It is essential that a mechanically powered grout mixer is used to obtain the optimum properties. A slow speed drill and mixing paddle may be used for single bag batches only.

## Yield / consumption

12.9ltr / 25kg bag at flowable consistency.
78 x 25kg bags / $m^3$.

**Note:**
For precision grouting of heavy machinery use MASTERFLOW 928 T or in critical operating conditions MASTERFLOW 885.

When a very rapid set is required in areas subject to chemical spillage or contamination, use epoxy grouts MASTERFLOW 400 / 410.

For additional information on MASTERFLOW 505 grout or other non-shrink grouting materials, contact your Degussa representative.

## Safety precautions

As with other products containing Portland cement, the cementitious material in MASTERFLOW 505 grout may cause irritation. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

## Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local Degussa representative.
Degussa reserves the right to have the true cause of any difficulty determined by accepted test methods.

## Quality

All products produced by Degussa certified manufacturing facilities, are produced to conform to systems designed to meet internationally recognised quality standards.

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REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** GROUTS PRIOR TO USE

# MASTERFLOW® 515

**(Formerly Grout mortar 500)**

**High strength, non shrink cementitious construction grout**

## Description

MASTERFLOW 515 is a ready to use product in powder form, which requires only the on-site addition of water to produce a non shrink grout of predictable performance.

## Applications

MASTERFLOW 515 is formulated for use at plastic or flowable consistency, and may be used with confidence for bedding, grouting and void filling operations including pile cap reprofiling and encapsulation.

## Advantages

- Non shrink.
- Adjustable consistency.
- Proved and predictable performance.
- High bond strength to steel and concrete.
- Early strength development even at flowable consistency.
- Impermeable.

## Packaging

MASTERFLOW 515 is supplied in 25kg bags.

## Typical properties when tested at w/p 0.30*

* Properties listed are only for guidance and are not a guarantee of performance.

| | |
|---|---|
| Water addition | 7.5 – 8.5 ltrs/ bag |
| Compressive Strength N/mm² BS 1881 Part 116 | Plastic |
| 1 day | 22 |
| 3 day | 30 |
| 7 day | 42 |
| 28 day | 52 |
| Flexural Strength N/mm² BS 4551 : 1980 @ 28 days | 8 |
| Water penetration (BS EN 12390 Part 8 :2000) | <10mm |

## Application procedure

**Preparation:**

The surface onto which the grout is to be applied should be scabbled to remove laitance and expose aggregate. Do not use bush hammers or similar preparation equipment that can crush the aggregate but leave it in place. The surface must be free of oil, dust, dirt, paint, curing compounds or other contaminants that could impair adhesion. Soak area to be grouted to minimise absorption. Surfaces should be damp but free of standing water. Particular attention should be paid to bolt holes to ensure that these are water-free. Use oil free compressed air to blow out bolt holes and pockets as necessary.

Base plates, bolts, etc. must be clean and free of oil, grease and paint. Set and align equipment. If shims are to be removed after the grout has set, then lightly grease them for easy removal.

Ensure formwork is secure and watertight to prevent movement and leaking during the placing and curing of the grout.

**Mixing:**

Damp down the inside of the grout mixer with water prior to mixing the initial batch of MASTERFLOW 515. Ensure the mixer is damp but free of standing water. Add the pre-measured quantity of water. Slowly add the MASTERFLOW 515, mixing continuously. Mix for 3-5 minutes until a smooth, uniform, lump free consistency is achieved.

**Placing:**

Place immediately after mixing, into the prepared area in such a manner that the grout has the shortest distance to flow. Pour the grout continuously maintaining a constant hydrostatic head wherever possible.

MASTERFLOW grouts are suitable for use with most types of pumping equipment.

Immediately after MASTERFLOW 515 grout is placed, cover all exposed grout with clean wet hessian and keep moist until grout surface is ready to be finished, or until final set. Alternatively, consider the use of a curing membrane from the MASTERKURE range.

## Storage

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction. Storage life is approximately 12 months when stored in ideal conditions in original sealed bags.

## Precautions

The temperature of both the grout and elements coming into contact with the grout should be in the range of +5°C to +35°C. Do not use water in an amount or at a temperature that will produce a consistency more than flowable or cause mixed grout to bleed or segregate. MASTERFLOW 515 should be laid at a minimum thickness of 5mm and to a maximum depth of 50mm.
For applications above 50mm consider the use of MASTERFLOW 524. For applications below 5mm consult Degussa Technical Services Department for advice.

***DO NOT OVERWORK AND AVOID USING MECHANICAL VIBRATION.***
***UNDER NO CIRCUMSTANCES SHOULD MASTERFLOW 515 BE RETEMPERED BY THE LATER ADDITION OF WATER.***

It is essential that a mechanically powered grout mixer is used to obtain the optimum properties. A slow speed drill and mixing paddle may be used for single bag batches only.

## Yield / consumption

13 litres / 25kg bag at flowable consistency.

**Note:**

For precision grouting of heavy machinery use MASTERFLOW 930 or in critical operating conditions MASTERFLOW 885.

When a very rapid set is required in areas subject to chemical spillage or contamination, use epoxy grouts MASTERFLOW 400 / 410. For additional information on MASTERFLOW 515 grout or other non-shrink grouting materials, contact your Degussa representative.

## Safety precautions

As with other products containing Portland cement, the cementitious material in MASTERFLOW 515 grout may cause irritation. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

## Note

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

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REQUEST AND REFER TO RECOMMENDED INSTALLATION PROCEDURES FOR **MASTERFLOW** GROUTS PRIOR TO USE