

DuraGrout® 550 (formerly DuraGrout® 555)

High strength, cement-based, shrinkage compensated grout

Description

DuraGrout 550 is a pre-blended cement-based powder. When mixed with water, it forms a high-performance grouting mortar with excellent flow properties.

After curing, it delivers a durable, high compressive strength, impermeable and chloride free shrinkage compensated grout. Specially formulated for bedding and precision grouting applications, **DuraGrout 550** is ideal for thicknesses exceeding 50 mm, providing reliable structural support.

Features and benefits

- Optimized for deep-section grouting, ensuring reliable structural support.
- Shrinkage compensated, minimizing volume change.
- High early and ultimate strength, allowing for rapid installation.
- Exceptional bond strength to both concrete and steel, ensuring secure adhesion.
- Superior resistance to water penetration, enhancing durability in aggressive environments.
- Designed for hot weather conditions, maintaining performance even in elevated temperatures.
- Enhanced durability. Deliver long-lasting performance in critical applications.
- Suitable for pumping or injection, providing versatility in placement methods.

Recommended for

- DuraGrout 550 adapts to fluid, flowable, plastic, and dry pack consistencies, making it suitable for various grouting applications.
- Ideal for bridges' bearing pads ensuring long-term stability and load transfer.
- Effective in pile caps treatment, providing enhanced durability.
- Used for anchor bolts and crane rails, ensuring secure fastening in structural and industrial applications.

- Optimized for precision grouting of machinery subjected to continuous vibration such as generators, milling machines, and turbines' base plates to maintain operational integrity.
- Effectively fills tie rod holes, preventing structural weaknesses and ensuring proper load distribution.

Composition

DuraGrout 550 is composed of high strength Portland cement, compound of selected additives, well graded fillers and aggregates.

Packaging

DuraGrout 550 is available in 25 kg bags.

Coverage

12.2 liter/25 kg bag.

Technical data

| | |
|-----------------------------------|----------------------------------|
| Plastic density | 2.2 kg/liter |
| Compressive strength ASTM C109 | 30 N/mm ² @ 3 days |
| | 40 N/mm ² @ 7 days |
| | 55 N/mm ² @ 28 days |
| Flexural strength ASTM C348 | >7.5 N/mm ² @ 28 days |
| Pot life | 45 minutes @ 20°C |

The strength of grout depends on many factors, which include mixing type and water, application temperature, humidity and curing. The table above shows average strengths of **DuraGrout 550** at 25°C when mixed to flowable consistency.

Surface preparation

- Ensure all substrates are rough, clean, sound, dust-free, and free from contaminants.
- Saturate the substrate with water, making sure it is damp but free of standing water before grouting.

- Bolt holes & pockets must be free of standing water; use compressed air to thoroughly drain them.
- Ensure that steel base plates & anchor bolts are clean and uncontaminated for optimal bonding.
- Secure formwork tightly and make it watertight to prevent leakage during grout placement and curing.
- The grouted area should remain free from excessive vibration until the grout has hardened.

Mixing

| | DuraGrout 550 | Water |
|----------------------|---------------|-----------------|
| Fluid consistency | 25 kg | 4.00±0.20 Liter |
| Flowable consistency | 25 kg | 3.70±0.20 Liter |
| | DuraGrout 550 | Water |
| Plastic consistency | 25 kg | 2.80±0.20 Liter |
| Dry pack | 25 kg | 1.90±0.2 |

- Store DuraGrout 550 bags in a shaded area before use to maintain product integrity.
 - Use a mechanically powered mixer or a slow-speed drill fitted with an appropriate mixing paddle to ensure uniform blending.
 - Before mixing the first batch, damp down the inside of the mixer with water. Ensure it is moist but free from standing water to prevent inconsistent mixing.
 - In hot weather, use chilled water to regulate grout temperature. The mixed mortar must not exceed 30°C.
 - In cold weather, use warm water to ensure the mixed mortar temperature remains above 10°C.
- Pour 90% of the pre-measured water into the mixer.
 - Slowly add the powder component while continuously mixing.
 - Mix for 2 minutes until a smooth, lump-free consistency is achieved.
 - Add the remaining 10% of water and mix for an additional 3 minutes to ensure optimal consistency.

Application

- Shade the grouting area to prevent direct exposure to sunlight.
- Ensure that all elements in contact with **DuraGrout 550** are within a temperature range of 10°C to 35°C. Avoid pouring if the ambient temperature falls below 5°C or in direct sunlight.
- Pour **DuraGrout 550** while still fresh, ensuring continuous flow. If delays occur, do not add extra water.
- **DuraGrout 550** can be poured manually or applied using a suitable pumping machine.
- Use metal straps positioned in the formwork to aid grout flow across greater distances. Mechanical vibration must not be used.
- Begin pouring from one side, maintaining a 15 cm hydrostatic head. Ensure 10 cm clearance between the formwork and the base plate edge on one side, and 5 cm clearance on the opposite side.
- A gentle spreading action with the metal strap may be performed to assist movement.
- Avoid exposed grout shoulders, as temperature differences may lead to cracking or de-bonding. If shoulders are necessary, anchor them to the substrate to prevent separation. Keep shoulders as small as possible to minimize risks.

Curing

- As a cement-based material, **DuraGrout 550** requires proper curing following concrete curing best practices. Adequate

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curing is critical for strength development and long-term durability.

- Always use tap water for curing to prevent premature drying and shrinkage-related issues.
- At low temperatures (below 10°C), use warm water to accelerate early strength development. Delay formwork removal as needed to ensure full hydration.
- At high temperatures (above 35°C), use cold water (below 20°C) to regulate hydration and minimize rapid evaporation.
- Maintain continuous damp curing for at least 5 days to achieve optimal strength gain.
- Cover the grout surface with wet hessian, ensuring proper moisture retention, then protect it with a polyethylene sheet to prevent moisture loss.

Important notes

- The quantity of water may vary slightly depending on mixing method and weather conditions. Ensure that excessive water is not added, as it can lead to bleeding or segregation in the mixed grout.
- Setting time and compressive strength are influenced by multiple factors, including mixing method, water addition, ambient temperature, humidity, and curing conditions.
- **DuraGrout 550** is suitable for grouting applications between 50 mm and 180 mm thick. For thinner applications, consider **DuraGrout 525** for optimal performance.
- For thicker grout applications, incorporate 10–12 kg of well-graded, washed aggregate (8–12 mm size) per 25 kg bag of **DuraGrout 550** to enhance stability and reduce shrinkage

Cleaning

Clean tools with water immediately after use. Hardened materials should be cleaned mechanically.

Storage and shelf life

To maintain its quality and suitability for use, the product should be stored in its unopened packaging, off the ground on pallets or similar structures, in a cool and dry environment. When stored under these recommended conditions, the product remains suitable for use for 12 months from the manufacturing date stated on the packaging.

Health and Safety

This product contains cement which may cause skin irritation. It may cause allergic skin reaction and eye damage. Avoid breathing dust. Wear protective gloves, eye goggles and clothing. In case of skin contact, wash with plenty of water. In case of eye contact, rinse continuously with water for several minutes and seek medical attention. Dispose excess material to special waste collection point in accordance with local & national regulation. Keep out of reach of children.

For further information, please ask for Safety Data Sheet for this product.

The most up-to-date TDS can be obtained from ACC Customer Service Department, or downloaded from our website: www.acc.com.eg.

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