ARDEX CE 580

Rapid Setting High Strength Grout

Shrinkage compensated

Excellent fluidity

High early and ultimate strength

Trafficable in 2 hours

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DESCRIPTION
ARDEX CE 580 is a high early strength, rapid setting cementitious grout suitable for a wide range of civil engineering applications where rapid return to service and high early strength are critical. ARDEX CE 580 is formulated using special blend of aggregates and advanced cement additives which form a Class C, high strength, low permeability grout which is suitable for permanent applications.

RECOMMENDED USES
- Precast panel grouting
- Airport lighting installations
- Structural repairs of beams
- Expansion joint repairs
- Rock bolt grouting
- Underpinning
- Columns and slabs
- Base plate grouting
- Bridge bearing grouting

ADVANTAGES
- High early and ultimate strength
- High chloride and sulphate resistance
- Excellent durability properties
- Pumpable and flowable

SURFACE PREPARATION
The substrate must be clean, sound, and free from all grease, oil, dust, laitance, and other surface contaminants such as curing membranes. Damaged or contaminated concrete must be removed to obtain a good bond to the substrate. Cut the edges of the repair vertically to a minimum depth of 20mm until the area is squared or boxed in shape. Greater depth is required for heavy-duty trafficable applications. Exposed reinforcing steel should be cleaned to remove all residual rust and concrete residue. Concrete should be removed from around and behind all corroding rebar to avoid future contamination of the repaired area. The substrate must be prepared correctly to remove all the deteriorated and detached concrete until a strong substrate with a rough surface is obtained. Any areas previously repaired and which are not perfectly bonded must also be removed.

PRIMING
To reduce the porosity of the substrate, priming the prepared substrate with ARDEX P 507 is recommended. Alternatively, the prepared substrate can be pre-soaked using water for at least 2 hours before applying ARDEX CE 580. Remove excess freestanding water on the surface prior to the application of ARDEX CE 580. The surface should be damp to touch without standing water.

FORMWORK PREPARATION
The area to be pumped must be enclosed with good quality rigid watertight formwork. The formwork must be able to rigidly confine the ARDEX CE 580 until it has set. It is recommended to use an appropriate form release agent. Formwork should be flushed out just prior to an application without any standing water present.

MIXING
Measure approximately 80% of the required water into a clean suitable sized pail and then add the entire contents of the bag while mixing with a heavy-duty electric drill on medium speed (approximately 680rpm). Add the remaining water and mix for about 2 – 3 minutes or until it is fully homogenized. The mixed material must be poured immediately for best results. Mix only the amount of material that can be placed within 10-20 minutes.

APPLICATION
ARDEX CE 580 is to be applied onto the pre-wetted or primed substrate. Make sure that the grout is applied whilst the substrate is still damp, or the substrate primer is still slightly tacky. It should be applied in a continuous pour to avoid cold joints. It is recommended to smooth the material with a steel trowel after the last pour. For ease and efficiency of application, ARDEX CE 580 can be pumped using a suitable automatic concrete or grout mixing pump. Follow the instructions as set by the pump manufacturer.

It is important to note that ARDEX CE 580 is an extremely fast setting material and should be pumped in shorter distances than with regular cementitious products ARDEX CE 580 can be installed from a minimum depth of 10mm to 100mm. For application depths greater than 100mm, contact ARDEX for further information about aggregate addition for large volume pours.

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PUMPING
Once the grout has been mixed you need an effective pumping method to deliver it to the area of application. Various models of batch mixers and continuous mixers are available for use, all with varying specifications. It is important to match your application's specifics with the capabilities of the mixer and pump. ARDEX can recommend the right mixer for your project.

Prior to pumping grout, rinse the mixer and charge the pump hopper with sufficient water to flush and cool the pump and all grout lines thoroughly. Check to ensure that all lines and hoses are clear and unobstructed. Once grout is mixed, it is important to keep it agitated continuously prior to pumping. It is important to pump continuously and avoid the formation of cold joints.

Following completion, dispose of excess production material in consideration of the environment. Carefully wash out mixer tanks and agitators into the pump hopper and pump the resulting washout material through the grout hoses to a suitable disposal site.

APPLICATION TEMPERATURES
The mix water's temperature should be kept as low as possible to prevent the grout from hydrating too rapidly. As with the water temperature, the higher the air temperature the more quickly the grout hydrates and sets. ARDEX specify mixing times and set times at an ambient temperature of 20°C. These times vary with temperature fluctuations, and adjustments will be required to compensate for this. In some cases, it may be necessary to cool the material, the mix water, keep the temperature as low as possible. It is estimated that every 10°C increase in temperature will halve the product set time. Likewise, every 10°C reduction will double the set time. ARDEX should be consulted for extreme temperature applications.

CURING
As with all cementitious products, ARDEX CE 580 must be cured properly to ensure maximum performance. Apply ARDEX P 507 or approved curing compound after initial set on all exposed surfaces. Curing compounds should be applied on to the surface of ARDEX CE 580 in accordance with the Technical Data Sheet for the curing compound. If a curing compound is not used then the product must be maintained wet for minimum of 3 days.

PACKAGING
ARDEX CE 580 is packed in polylined paper sacks – net weight 25kg

STORAGE AND SHELF LIFE
ARDEX CE 580 has a shelf life of 6 months when stored in the original unopened packaging in a dry place at 23°C and 50% relative humidity.

CLEAN UP
All grouting equipment shall be thoroughly washed with clean water after grouting operations are completed.

TECHNICAL DATA

Mixing Ratio	4.5 – 5.5 L of water per 25kg bag
Coverage	18% - 13.5 L per 25kg 22% - 14.7 L per 25kg
Application thickness	Refer to ARDEX-QUICSEAL for advice and approval on pour thicknesses with dimensions exceeding 100mm
Max Particle size	0.6mm

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CHARACTERISTICS	TEST METHOD	RESULTS
Compressive Strength	BS EN 12190 : 1999	
2 hours		≥ 15 MPa
4 hours		≥ 45 MPa
1 day		≥ 55 MPa
7 days		≥ 65 MPa
28 days		≥ 75 MPa
Setting time	EN 196-3 / EN 447	
	Initial	≥ 25mins
	Final	≤ 40mins
Fresh Wet Density	BS EN 1015-17-2000	2100 - 2250kg/m^3
Flexural Strength	BS EN 196-1: 2006	≥ 6 MPa

Technical data according to ARDEX Quality Standards. All data based on a partial, in-lab mix at 23 ± 2°C and RH 55 ± 10%, water powder ratio 0.18

SAFETY PRECAUTIONS

ARDEX CE 580 should not come into contact with the skin, eyes or be swallowed. Ensure adequate ventilation and inhalation of the dust. Wear suitable gloves, goggles and other protective clothing. The use of barrier creams can provide additional skin protection. When working in confined areas suitable respiratory equipment must be used. In case of contact with skin, rinse with plenty of clean water then wash with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water, then seek medical attention without delay. If swallowed, seek medical attention straight away, do not induce vomiting. The Safety Data Sheets (SDS) is available at www.ardex-quicseal.com

DISPOSAL/SPILLAGE

Please refer to the Safety Data Sheet for the safe handling, storage and disposal of chemical products.

DISCLAIMER

The technical datasheets are based on the latest information and given in good faith and represent the best of our knowledge and experience at the time of printing. They are primarily offered for users' consideration and evaluation. It is the responsibility of the user to conduct their own tests to validate the suitability of the products. It is also the responsibility of the user to ensure that the products are used and handled correctly and in accordance with any applicable standards, the product instructions, and recommendations and only for the uses they are intended. As we have no control over site conditions and the execution of the work, we accept no liability for any loss or damage which may rise as a result thereof. We also reserve the right to update the information at any time without prior notice to you to reflect our ongoing research and development program.

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