

MasterLife SRA 150

Expansive agent for the production of shrinkage compensating concrete.

Material description

MasterLife SRA 150 is an inorganic product in powder form to be used in addition to the other concrete components to produce shrinkage compensating concrete. It is a special clinker, burnt at high temperature, rich in free lime and whose minor compounds are calcium silicates, aluminates, ferro-aluminates and sulphates.

In contact with the mixing water, the transformation of the oxide into the corresponding calcium hydroxide causes an expansion which compensates the subsequent concrete shrinkage.

The clinkering temperature of MasterLife SRA 150, the particle size distribution and the presence of the minor compounds coating the calcium oxide enable the hydration rate and therefore the expansive process to be properly regulated.

Fields of application

The use of MasterLife SRA 150 for shrinkage compensating concrete is recommended in the following applications:

Hydraulic Works

- Tanks.
- Reservoirs and swimming-pools.
- Depurators.
- Wharves and structures subject to sea-water attacks.
- Jetties and blocks for sea works.
- Containers for liquids and/or gases.
- Prestressed circular structures.
- Sewers, tunnels and canals.
- Sealed injections.

Reinforced and Prestressed Concrete Structures

- Long structures.
- Thin solid structures.
- Prestressed concrete beams.
- Annular beams for sports facilities.
- Finke, Mohnier and Vierendel beams.
- Floors for cold stores.
- Bridge decks.

- Filling of hollow structures.
- Industrial floors.
- Floor for sports centres (skating-rinks, tennis courts, running-tracks, etc.).
- Weakly reinforced hyperstatic structures.
- Boats in reinforced concrete.
- Shields for nuclear plants.
- Road and railway tunnel vaults.
- Underwater and underground structure.
- Foundations and underpinnings.
- Hyperstatic arc-bridges.
- Box vaults, domes and thin structures in reinforced concrete.
- Roof and covers in architectural concrete.

Prefabrication

- Sleepers, kerbs, pavements.
- Prestressed large spanned beams.
- Precast panels.
- Electricity concrete piles, pipes, etc.

Structural Reinforcements

- Repairs of vertical structures and loaded pillar.
- Additional members to sustain existing structures.
- Rock consolidation.

Not to be used

MasterLife SRA 150 must not be used in those applications where a highly precise control of dimensional variations of concrete, mortar or grout is required, as even a very slight change in the dosage of expansive agent could impair the success of the work.

Typical examples of such applications are: machinery grouting, structural repairs of deteriorated surfaces and prefabricated joints. Moreover, in these cases, bleed water must be eliminated completely as, in the case of grouting operations for example, the water will be trapped beneath the metallic bedplate of the machine.

MasterLife SRA 150 must not be used in non-reinforced or non-confined concretes.

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The use of MasterLife SRA 150 ready-to-use product is recommended in the filling of post-tensioned cable sheaths.

Dosage

The dosage of MasterLife SRA 150 can range from 20 to 40 kg per m³ of concrete as a function of the prescription of the concrete mix.

The advised dosage is from 20 to 30 kg per m³ of concrete.

Packaging

MasterLife SRA 150 is available in 20 kg bags. Store the product in a dry and sheltered place.

Storage

Do not use the product if bag is damaged. It is recommended that gloves be worn when using the product.

Technical Information	
Form	Powder, light grey
Relative density (kg/l)	0.900 – 1.200
Real density (kg/l)	3.000 – 3.400

Directions for use

MasterLife SRA 150 must always be used together with cement, aggregates and water, as it cannot be used only with water. It can be added to the concrete mix at the same time as cement and it is compatible with most admixtures, particularly with MasterEase, MasterGlenium, MasterRheobuild, MasterSet, MasterPozzoloth, MasterAir, with the curing compound MasterKure.

MasterLife SRA 150 should always be used together with MasterGlenium PAV or MasterEase. The former completely eliminates shrinkage effects, the latter through the reduction in mixing water causes a shrinkage decrease. **MasterLife SRA 150 must be mixed accurately with the other concrete components. After placement, adequate damp curing is required.**

Curing and expansion

Compared with other expansive agents causing the formation of ettringite, one of the main advantages; MasterLife SRA 150 is the shorter curing time required to guarantee expansion. Any expansive agent can cause a volume increase only if concrete

is kept in a damp ambient which supplies the water necessary for the reaction which causes expansion. The reaction which leads to the formation of ettringite needs approximately 7 days in a humid atmosphere to reach maximum expansion, while, using MasterLife SRA 150 one day's curing is sufficient to obtain almost complete expansion (Fig. 1). Obviously, the longer the moist cure, the better the concrete containing MasterLife SRA 150 will perform.

Nevertheless, an only 24 hours curing - in concrete containing MasterLife SRA 150 - does not cause expansion to be hindered, which, on the contrary, occurs if other expansive agents are used.

In hot and dry climates damp curing must be continued (by wetting concrete or protecting it with wet coverings for at least seven days or applying a MasterKure WB curing compound).

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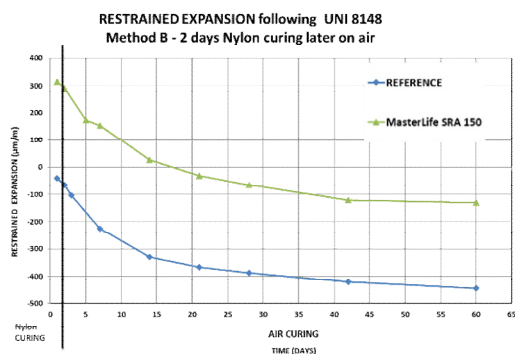


Fig. 1: Restrained expansion following UNI 8148 with MasterLife SRA 150. (Cement CEM I 42,5 = 300 kg/m³; water = 180 l/m³; MasterLife SRA 150 = 20 kg/m³; aggregates = 1975 kg/m³).

Safety instruction

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.

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