



Isolamento sismico, apparecchi di appoggio, giunti di dilatazione
Seismic isolation, bridge bearings, expansion joints

AGOSTO 2019 REV. 0



Conforme alla norma UNI EN 1504-4

ATL-Adhesive

Epoxy adhesive, bicomponent, thixotropic, free of solvents, used for structural applications, bondings, fixings and rigid sealings between materials also of different nature.



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Scope of Use

ATL-Adhesive has been created and formulated to guarantee a very high bonding to the supports of different nature, such as concrete and steel to make rigid joints. The application can be carried out manually or by means of a suitable pump.

The main application fields are:

- Bonding and sealing between prefabricated concrete elements;
- Bonding and sealing between steel elements;
- Steel reinforcement;
- Fixing of steel bars;
- Sealing of holes for tie bars;
- Welding of static cracks.

Product Description

ATL-Adhesive is a structural adhesive, epoxy resin base, bicomponent thixotropic, free of organic solvents and plasticizers, loaded with inorganic fillers, it guarantees a high bonding capacity.

ATL-Adhesive is CE marked through an accreditation system 2+ (certificate n. 1305-CPR-0859), according to standard UNI EN 1504-4 *specific for structural bonding*.

Application Requirements and Chemical Characteristics

Main characteristics which identify **ATL-Adhesive** are:

- **High bonding**, main requirement to guarantee bonding durability, fixing or sealing between elements of different nature;
- **No shrinkage**, it guarantees volumetric stability of the material preventing bonding loss or the formation of cracks after long curing time;
- **High mechanical resistance**, it guarantees an optimal behaviour to static and dynamic forces;
- **Dielectricity**, it is particularly important to guarantee the structures durability in the case of stray current;
- **High chemical resistance**, it resists chemical aggressions such as acids, alkaline, solvents and hydrocarbons.

The main requirements, performances and characteristics that identify **ATL-Adhesive** are shown in the following table:

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Features	
Mix color	Dark grey
Mixing ratio A: B by weight	4 : 1,5
Density of the mixture A + B	1,35 ± 0,01 Kg/dm ³
Application temperature	5 ÷ 35 °C
Workability time, UNI EN ISO 9514	a 5°C ≥ 40 min a 20°C ≥ 30 min a 35°C ≥ 20 min
Open time, UNI EN 12190	a 5°C ≥ 55 min a 20°C ≥ 50 min a 35°C ≥ 35 min
Glass transition temperature (Tg), UNI EN 12614	52,2°C
Performance	
Compressive strength at 3 days, UNI EN 12190	≥ 50 MPa
Compressive strength after 7 days, UNI EN 12190	≥ 70 MPa
Flexural strength after 7 days, UNI EN 12190	≥ 30 MPa
Flexural-tensile strength UNI EN ISO 178	≥ 42 MPa
Flexural-tensile modulus of elasticity, UNI EN ISO 178	≥ 4.300 MPa
Modulus of elasticity in compression, UNI EN 13412 Method 1	≥ 4.500 MPa
Steel to steel adhesion - inclined shear test, UNI EN 12188	angolo di 50° ≥ 70 MPa angolo di 60° ≥ 75 MPa angolo di 70° ≥ 90 MPa
Adherence for direct traction on steel, UNI EN 12188	≥ 20 MPa
Determination of electrical resistance - UNI EN 1081 (METHOD A)	≥ 50 GΩ
Linear thermal expansion coefficient, UNI EN 1770	≤ 80 μm/(m*°C)
Sensitivity to water UNI EN 12636. Adhesion of hardened concrete onto hardened concrete. Location of the breaking plane	Break in the concrete Test passed

Mixing ratio of both components and packaging

ATL-Adhesive is a bicomponent product, composed of component A, epoxy resin base and component B hardener.

Mixing ratio by weight is 4 to 1,5 that is 4 kg of component A are mixed with 1,5 kg of component B.

Component A is supplied in cans of 4Kg.

Component B is supplied in cans of 1,5 Kg.

Storage

ATL-Adhesive should be stored in their original packages perfectly intact, in a shelter, dry and clean place, away from direct sunlight, at a temperature between +10°C and +30°C. At a temperature lower than +10°C air-voids may appear due to the resin viscosity increase, in that case it is recommended to warm the closed packages by partially immersing them in hot water.

ATL-Adhesive should be stored away from fire or open flames.

ATL-Adhesive has a pot-life of 18 months if stored as specified above.

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Application

1. Support Preparation

Support preparation depends on the type of the support itself:

- Concrete supports, should be perfectly intact, in case of degraded surfaces it is recommended to repair the damaged areas by using cement mortar choosing if possible, air expansive mortars which contain inorganic fibres. When repair activities like the one described above are not required, it is sufficient to perfectly restore and clean surfaces by means of sandblasting to eliminate rests of releasing agents, oil and grease, it is also necessary to clean the surface by means of compressed air. Alternatively to sandblasting, it is also possible to use hydro-sandblasting which has to be carried out after an accurate cleaning of the surface, which has to be dry before the application of **ATL-Adhesive**;
- metallic supports: sandblasting grade SA 2 ½ should be carried out;
- headstones and clay supports: these surfaces should be perfectly intact and united, cleaning should be carried out by hydro-cleaning by means of pressure water. **Surfaces should be dry at the time of the application of ATL-Adhesive.**

2. Mixture

It is not recommended to start mixing **ATL-Adhesive** components if ambient and/or support temperature is lower than + 5°C, or higher than +35°C.

Component A should be mixed by means of a slow mixer until complete homogenization, before adding component B. It is recommended that both components A and B are mixed in their right mixing ratio by weight 4 to 1,5 as indicated in their packages. In order to avoid mistakes, it is always recommended to mix the entire package of (4 kg) of component A with the entire package (1,5 kg) of component B. The mixing should continue for about one minute until obtaining a homogeneous paste of a uniform colour.

3. Use of solvents or diluents

It is not recommended to mix **ATL-Adhesive** with solvents or diluents to modify its viscosity. **For that purpose, it is enough to warm component A at 40°** by immersing the package in hot water, or using other devices like electric heating or oil radiators.

4. Application

It is not recommended to start mixing **ATL-Adhesive** components if ambient and/or support temperature is lower than + 5°C, or higher than +35°C.

Application methods of **ATL-Adhesive** change in relation to its and in particular to make:

- bonding, the application is carried out by means of a smooth or teathed spatula. For concrete bonding, it is not recommended to exceed 3 mm thickness, for applications on metal surfaces, product thickness should not exceed 0,5 mm;
- steel elements or bars fixing/anchoring, the application is generally carried out by means of a suitable pump for resin or a follower plate press. Anchoring thickness between the sides of the recess or the hole should be minimum 3 mm and maximum of 70 mm. In the case the element to be anchored is positioned in the sides of the recess or the hole after **ATL-Adhesive** application, it is recommended to calculate the amount of product to be applied in order to avoid overflowing once the element to be anchored has been positioned;
- rigid sealing, product application is carried out using a smooth or teathed spatula. Application thickness should be at least 3 mm and a maximum of 70 mm.

5. Application tools

ATL-Adhesive can be applied by means of a spatula or a pump for resin.

6. Safety warnings

Indications and prescriptions of the product are detailed in the relative safety data sheet, in particular during the mixture and application of **ATL-Adhesive**, it is recommended to always wear DPI as provided by the safety data sheet.

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