



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

AGOSTO 2019 REV. 0



Conforme alla norma UNI EN 1504-4-6

ATL-Fixed

Epoxy adhesive, bicomponent, fluid, free of solvents, used for structural repair, bondings and anchoring between materials of different nature also to repair cement surfaces.



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Scope of use

ATL-Fixed has been created and formulated to be poured due to its high fluidity. Also available rapid type.

ATL-Fixed is a reliable product, easily used in different applications such as:

- structural bondings or anchoring between materials of different nature, such as concrete, steel, headstones elements, clays, wood;
- reinforcing steel bars, studs, connectors and metallic profiles for different types of supports such as concrete, steel, wood, etc.;
- concrete structures repair.

The application thickness of **ATL-Fixed** vary according to the type of use and the roughness of the substrate, in particular for anchoring bars etc., the minimum application thickness is 3 mm, the maximum thickness is 10 mm, for higher thicknesses it can be added with a maximum of 20 % of spheroidal quartz sand;

Product description

ATL-Fixed is an adhesive, bicomponent, fluid, epoxy-amine resine base, loaded with inorganic inerts, free of solvents, diluents or plasticizers. It guarantees a very high adhesive capacity which permits bonded or anchored elements to become monolithic.

ATL- is CE marked through an accreditation system 2+ according to standard UNI EN 1504-4 *specific for structural bonding*.

Application Requirements and Characteristics

Main characteristics which identify **ATL-Fixed** are

:

- **High bonding**, main requirement to guarantee the monolithicity between the elements which are bonded among them also of different nature, in order to make anchors durable;
- **No shrinkage**, it guarantees volumetric stability of the material preventing bonding loss or the formation of cracks after long curing;
- **High mechanical resistance**, it guarantees an optimal behaviour to static and dynamic forces;
- **High dielectricity** it is particularly important to guarantee the structures durability in case of stray current
- **High chemical resistance**, it resists chemical aggressions such as acids, alkaline, solvents and hydrocarbons.

The main requirements, performance and characteristics of the **ATL-Fixed** are detailed in the chart below:

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| Features | |
|--|---|
| Adhesive color | Grey |
| Application temperature (minimum and maximum) | 5 - 35 °C |
| Mixing ratio A: B (by weight) | 4 : 1 |
| Workability time UNI EN ISO 9514 | a 5°C con comp. B 50 min - comp. BR 30 min a 20°C con comp. B 40 min - comp. BR 10 min a 30°C con comp. B 30 min - comp. BR 5 min |
| Open time (comp. B standard) UNI EN 12189 | 75 min |
| Specific gravity (A + B) UNI EN ISO 1183-1 | 1,45 ± 0,05 Kg/dm ³ |
| Glass transition temperature (Tg) UNI EN 12614 | 62,3°C |
| Chloride ion content EN 1015-17 | ≤ 0.05% |
| Performance | |
| Adherence to steel for direct traction UNI EN 12188 (UNI EN 1542) | > 16 MPa |
| Adherence to concrete by direct traction UNI EN 1542 | ≥ 3 MPa - breaking of the concrete |
| Adherence to wood (spruce) for direct traction ASTM D 4541 | >1 MPa – breaking of the wood |
| Shear strength by ASTM D 732 punch | ≥ 37 MPa |
| Determination of adhesion of fresh concrete on hardened concrete UNI EN 12636 | Test passed - breaking of the concrete |
| Determination of adhesion of hardened concrete on hardened concrete UNI EN 12636 | Test passed - breaking of the concrete |
| Determination of injectability on a 0.8 mm slot, traction adhesion UNI EN 12618-2 | Test passed - breaking of the concrete |
| Steel adhesion on steel shear test on inclined plane UNI EN 12188 | Inclin. of 50° > 100 MPa Inclin. of 60° > 100 MPa Inclin. of 70° > 110 MPa |
| Pull-out resistance UNI EN 1881 (load 75 kN) | Prova superata < 0.5 mm |
| Determination of the glass flow UNI EN 1544 (after three months) | Prova superata < 0,4 mm |
| Compressive strength UNI EN 12190 | ≥ 90 MPa |
| Flexural-tensile strength UNI EN ISO 178 | ≥ 40 MPa |
| Cut resistance UNI EN 12615 | >10 MPa - Rottura nel calcestruzzo |
| Modulus of elasticity in compression UNI EN 13412 (method 1) | ≥7.000 MPa |
| Durability, measured as adherence after thermal cycles and humidity cycles, UNI EN 13733 | Test passed - breaking of the concrete |
| Linear withdrawal UNI EN 12617-1 | 0 % |
| Linear thermal expansion coefficient UNI EN 1770 | ≤ 50 µm/(m*°C) |

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Mixing ratio of both components and packaging

ATL-Fixed is a bicomponent product, composed of component A, epoxy resin base and component B hardener. Mixing ratio(A:b) is 4 to 1, that is 4 kg of component A are mixed with 1 kg. of component B.

Component **A** is supplied in cans of 4 Kg.

Component **B** is supplied in cans of 1 Kg.

Storage

ATL-Fixed 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 +35°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-Fixed should be stored away from fire or open flames. ATL-Fixed has a pot-life of 18 months if stored as specified above.

Application Instructions

1. Support preparation

The methods of preparing the supports vary according to the nature of the support itself and precisely for:

- Concrete supports: they should be perfectly intact, in case of degraded surfaces it is recommended to repair the damaged areas using cement mortar, choosing if possible, air expansive mortars which contain inorganic fibres. When repair activities like the once 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 to be treated 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-Fixed**;
- metallic supports: sandblasting grade SA 2 ½ should be carried out;
- headstones and clay supports: they should be perfectly intact and united. Cleaning can be carried out by hydrocleaning with pressure water. Surfaces should be dry at the time of the application of **ATL-Fixed**
- Wooden supports: they should be roughen by means of sanding or sandblasting. Traces of previous paints or coatings should be removed before the product application. It is recommended to clean the surface with compressed air.

2. Mixture

It is not recommended to start mixing **ATL-Fixed** 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 (BR for rapid type). It is recommended that both components A and B are mixed in their right mixing ratio by weight 4 to 1 as indicated in their packages. In order to avoid mistakes, it is always recommended to mix the entire package of (4 kg) component A with the entire package (1 kg) of component B (BR for rapid version). Mixing should continue for about one minute until obtaining a homogeneous paste of a uniform colour

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3. Use of solvents or diluents

It is not recommended to mix **ATL-Fixed** 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. **ATL-Fixed** can be diluted with **ATL- Solvente E** up to 5% in the case of using the product as a bonding promoter for concrete casting only.

4. Application

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

Application methods of **ATL-Fixed** change in relation to its usage and in particular to the type of activity, such as:

- Anchoring, the application should be carried out by pouring. Anchoring thickness between the sides of the recess or the hole should be minimum 3 mm and maximum of 10 mm, for higher thickness it is recommended to use **ATL-Fixed** with 20% of spheroidal quartz, in these cases mixing should be careful. In the case the element to be anchored is positioned in the sides of the recess or the hole **ATL-Fixed** pouring, 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;
- Bonding, the application is carried out by using a spatula or a rigid brush. Application thickness should be a maximum of 3 mm, for applications on metallic surfaces, the application thickness should not exceed 0,5 mm.
- Concrete repair, the application is carried out, by means of a brush, roller on a surface of cured concrete immediately before the new concrete casting in such a way that the application is carried out "wet on wet". Concrete repair activities should not be carried out after the application of **ATL-Fixed** 90 minutes (at 20°C). In order to improve the application of the product in this specific use, mainly during winter time (+ 5 / +10 °C), **Solvent for ATL-Fixed** can be added to the product in a quantity not more than 5%.

5. Application tools

ATL-Fixed can be applied by pouring using a spatula, a rigid brush or roller.

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-Fixed** it is recommended to always wear DPI as provided by the safety data sheet.

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