# resoltech 8050 ECO

## Hardener 8058 ECO

## Biobased epoxy profiling & fairing filler




- **25% biobased on the resin part***
- **Simple mixing ratio 1/1 by weight or volume**
- **Easy sanding**
- **Fast curing**
- **Lightweight: 0,8 density**

*ratio of the number of biobased carbon atoms / the number of total carbon atoms

# INTRODUCTION

RESOLTECH 8050 ECO / 8058 ECO is a fast curing, lightweight, **and easy sanding epoxy filler**. It is a premium choice for profiling & fairing above and below the waterline for professional applicators on steel, aluminum and composite materials.

The specially formulated lightweight epoxy filler will apply from very thin layers up to 25 mm in one coat without the risk of sagging/slumping. This filler will result in **a high strength and impact resistant watertight surface**.

The formulation of the 8050 ECO / 8058 ECO will help improve health and safety for the workers and follows the latest EU regulation (CE) n°453/2010 and **does not contain any CMR materials**. When sanded, the surface of this system is smooth enough to be directly overcoated with RESOLCOAT 3010T / 3014T high build epoxy primer and is **compatible with all paints & primers**.

RESOLTECH 8050 ECO / 8058 ECO fast curing characteristics enable applications of several layers a day with sanding between them, improving the productivity of the workers. It may be applied in covered facilities or outside as it offers little sensivity to climate conditions.
Its excellent waterproof property enables to guarantee long lasting barriers when used as osmosis treatment.

**Easy to sand or mill** with CNC, RESOLTECH 8050 ECO / 8058 ECO may be used as profiling filler on low density foams blocks for plugs manufacturing and tooling boards adhesive. RESOLTECH 8050 ECO / 8058 ECO is the product that offers long-term performance of superior quality.

**With 25% of biobased carbon atoms in the resin part**, the use of 8050 ECO will reduce the carbon footprint of profiling & fairing making no concessions on thermo-mechanical performances.

# MIXING RATIO

The mixing ratio must be respected neither excess nor default. The mixture should be thoroughly stirred to ensure full homogeneity. It is recommended to use flat spatulas & trowels to hand mix the resin & hardener on a flat surface to avoid air incorporation during the mix.

| System | 8050 ECO / 8058 ECO |
|---|---|
| Mixing ratio by weight | 1 / 1 |
| Mixing ratio by volume | |

# APPLICATION

- It is mandatory to respect the mixing ratio, all excess or default will result in a loss of thermo-mechanical properties.
- Substrate temperature should be minimum 10°C and maximum 35°C. Product temperature should also be minimum 10°C and maximum 35°C. Ambient temperature should be minimum 10°C and maximum 35°C.

**Surface preparation :**

*As general rule: all substrates must be sanded, cleaned and dried*

- On previously painted surfaces : clean thoroughly to degrease the surface and sand with 80-180 grade paper or remove all previous coatings if in poor condition and prime the substrate.
- Steel/Aluminum: Prime with RESOLCOAT 3010T / 3014T.
- Wood: Prime stable constructions only, with RESOLCOAT 1010 ECO / 1014 ECO.
- GRP: For osmosis treatment, prime the sanded fibre with 1020L / 102xL in order to waterproof the substrate and lightly sand/deglaze before application of filler.
- BARE GRP/COMPOSITE: Remove surface wax/mould release agent with degreaser, sand with 80-180 grade paper. If left for longer than 24 hours, two component epoxy primers and fillers will need sanding with 80-180 grade paper to ensure a good mechanical adhesion.

*Mix the two components thoroughly to an even colour. Apply firmly in a spreading action. When hardened, sand smooth with 80-180 grade dry paper.*

**Overcoating:**

RESOLTECH 8050 ECO / 8058 ECO may be overcoated with itself or with RESOLCOAT 3010T / 3014T as soon as it is cured enough.

***Warning**: On thick applications, with high temperatures it is recommended to test the desired thickness at application conditions & substrate temperature to ensure that no exothermic reaction occurs.*

**Application coverage vs thickness :**

Coverage will depend on the thickness needed to profile. The following table indicates the average consumption vs thickness.

| Thickness | Coverage |
|---|---|
| 1 mm | 0.8 kg/m² |
| 5 mm | 4 kg/m² |
| 10 mm | 8 kg/m² |

## BIOBASED CARBON CONTENT

| References or mix | 8050 ECO | 8050 ECO<br>8058 ECO |
|---|---|---|
| Biobased carbon mass content* | 25% | 14% |

*ratio of the number of biobased carbon atoms / the number of total carbon atoms

# PHYSICAL CHARACTERISTICS

## 1 Visual aspect

**8050 ECO :**
Blue paste

**8058 ECO :**
Light white paste

**Mix :**
Light blue paste

## 2 Density

| References | 8050 ECO | 8058 ECO |
|---|---|---|
| Density at 23°C | 0.80 | 0.80 |
| Mixed density at 23°C | 0.80 | |

ISO 1675, ± 0.05 tolerance

## 3 Water absorption

| System | 8050 ECO / 8058 ECO |
|---|---|
| Water absorption | 0.56 % |

Measured on pure resin according to ISO 62

# REACTIVITY

## 1 Gel time

| System | 8050 ECO / 8058 ECO |
|---|---|
| Gel time on 70mL (~4cm thickness) at 23°C | 18 min |
| Temperature at exothermic peak on 70mL at 23°C | 48°C |
| Time at exothermic peak on 70mL at 23°C | 20 min |
| Gel time on 2mm film at 23°C | 45 min |

Reactivity measurements made with Trombotech®

## 2 Sanding

| System | 8050 ECO / 8058 ECO | | | | | |
|---|---|---|---|---|---|---|
| Thickness | 5 mm | | 10 mm | | 25 mm | |
| Temperature | 20°C | 30°C | 20°C | 30°C | 20°C | 30°C |
| Can be sanded after | 5h | 4h | 4h | 3h30min | 3h30min | 2h30min |

# HARDENING AND POST CURING

In order to obtain the maximum thermo-mechanical properties, post curing cyles as below have to be fully respected. The table below shows the glass transition temperatures (DMA type) depending on curing cycles.

## 1 Glass transition temperature & Hardness

| System | | 8050 ECO / 8058 ECO |
|---|---|---|
| 14 days at 23°C | $T_G$ | 48.3°C |
| | Shore D Hardness | 70 |
| 16h at 60°C | $T_G$ | 68.0°C |
| | Shore D Hardness | 72 |

TG measured by DSC, 10°C/min, inflexion point
Shore D hardness measured at 23°C according to ISO 868

## 2 Temperature stability

| Curing cycles | % of expansion over 1 cm (thickness) |
|---|---|
| After 2h at 60°C | 0.07% |
| After 2h at 60°C + 2h at 80°C | 0.12% |
| After 2h at 60°C + 2h at 80°C + 2h at 100 °C | 0.34% |
| After 2h at 60°C + 2h at 80°C + 2h at 100 °C + 2h at 120°C | 0.36% |
| After cooling back 23°C | 0.24% |

These expansion values show that co-curing the 8050 ECO / 8058 ECO filler between layers of prepreg when manufacturing a complex shape with sharp angles is possible.

# MECHANICAL PROPERTIES

| System | | 8050 ECO / 8058 ECO |
|---|---|---|
| 14 days at 23°C | FLEXION<br>Modulus<br>Maximum strength<br>Elongation at maximum strength | <br>1.04 GPa<br>12.3 MPa<br>1.6% |
| 16h at 60°C | FLEXION<br>Modulus<br>Maximum strength<br>Elongation at maximum strength | <br>1.28 GPa<br>18.7 MPa<br>1.75% |

Flexion properties on pure resin according to ISO 178

## PACKAGING

- Box kit of 0.5kg + 0.5kg
- Box kit of 2.5kg + 2.5kg
- Bucket kit of 15kg + 15kg
- Drum kit of 150kg + 150kg

## TRANSPORT & STORAGE

Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area. Our products are guaranteed in their original packaging (check expiry date on the label).

## HEALTH & SAFETY

Skin contact must be avoided by wearing protective nitrile gloves & overalls or other protective clothing.
Eye protection should be worn to avoid risk of resin or hardener entering the eyes. If this occurs flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention.
Ensure adequate ventilation in work areas. Respiratory protection should be worn with ABEKP coded filters.
RESOLTECH issues full Material Safety Data Sheet for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using before commencing work.



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