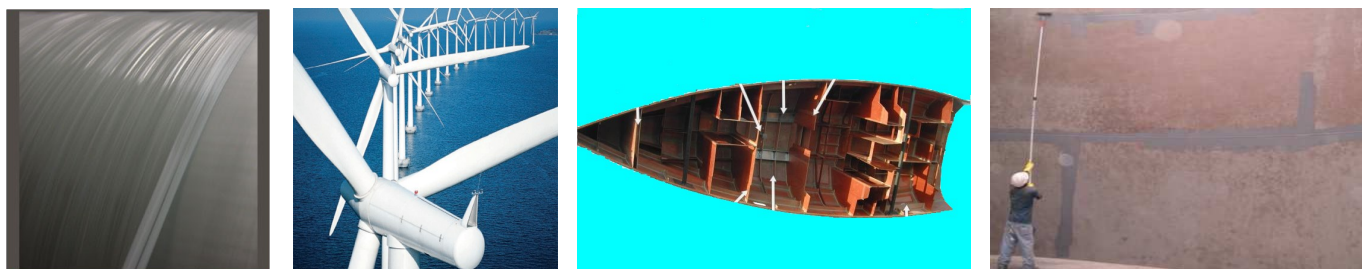


RESOLTECH 1000

Hardeners 1003, 1006, 1008, 1015

Multipurpose Epoxy System

- Room temperature curing
- Low viscosity and good wetting properties
- T_g from 67°C to 108°C
- Choice of extra slow, standard, fast, and humid environments hardeners



RESOLTECH 1000 is a multipurpose epoxy resin system formulated for a wide range of applications. It enables to manufacture structural composites parts with all existing reinforcement fabrics.

It is intended for filament winding, wet lay-up, infusion, RTM and press processes and uses the most up-to-date epoxy chemistry available. It is also possible to use the 1000 resin system for coatings.

The low initial viscosity allows thorough wetting of fibers reinforcement and offers excellent air release properties of the resin / hardener mixture.

RESOLTECH 1000 system formulation ensures the highest cross-linking available at room temperature curing conditions.

The choice of hardeners: **1003 (extra slow)**, **1006 (standard)**, **1008 (fast)** offers a good versatility to this system and the **1015 hardener enables applications in wet & cold environments**.

A **thixotropic version** of the 1000 system, the **1000T** is available on request for vertical applications like for all other RESOLTECH resin systems.

This 2015 improved health and safety formulation following the latest EU regulation (CE) n°453/2010 grants a low toxicity for users, reducing risks for workers, which is particularly important for those using the product in open-mould, hand lay-up situations, where skin contact and exposure to vapours can be difficult to avoid completely.

Resin 1000

Hardeners 1003, 1006, 1008, 1015

Multipurpose epoxy system

- T_G from 67°C to 108°C
- Low viscosity and exceptional wetting properties

MIXING RATIO

Systems	1000 / 1003	1000 / 1006	1000 / 1008	1000 / 1015
Mixing ratio by weight	100 / 32	100 / 27	100 / 16.5	100 / 50

The mixing ratio must be accurately followed. It is not possible to change the ratio, it would result in lower mechanical properties. The mixture should be thoroughly stirred to ensure full homogeneity.

It is important to note that epoxy systems tend to heat up much faster in a pot than as a thin film. It is therefore necessary to only mix the necessary amount usable within the given pot life. Keeping the mixture in flat open containers reduces the risks of exothermic reaction.

APPLICATION

The standard procedure of working with epoxy systems applies this system. The 1000 system can be applied by brush, roller, infused with 1003 hardener or injected. In case of laminating over a cured surface without peel ply, it is required to deglaze, clean and degrease the support prior to laminating.

It is recommended to have workshop temperature conditions between **18-25°C** in order to facilitate the mixing and the fibers reinforcement impregnation. A lower temperature will increase the viscosity of the mix as well as its pot life. On the contrary, a higher temperature will reduce the viscosity and the pot life of the mix. The 1015 hardener enables applications at low temperatures.

For more information, please refer to the applications technical bulletins (TechNotes), available on request.

PHYSICAL CHARACTERISTICS

Visual aspect

1000 :	Opalescent neutral liquid
1003, 1006, 1008 & 1015 :	Transparent yellow liquid
Mix :	Neutral to transparent yellow liquid

Densities (ISO 1675, ± 0.03)

References	1000	1003	1006	1008	1015
Density at 23°C	1.16	0.95	0.95	0.99	1.01
Mix density at 23°C	-	1.11	1.12	1.14	1.11

Resin 1000

Hardeners 1003, 1006, 1008, 1015

Viscosity (ISO 12058.2, $\pm 15\%$ tolerance)

References	1000	1003	1006	1008	1015
Viscosity at 23°C (mPa.s)	5100	5	12	36	770
Mix viscosity at 23°C (mPa.s)	-	395	565	1340	2200

REACTIVITY AT 23°C

Systems	1000 / 1003	1000 / 1006	1000 / 1008	1000 / 1015
Gel time on 70mL (~4cm thickness)	12h15min	2h25min	24min	23min
Time at exothermic peak on 70mL	12h50min	2h30min	25min	27min
Temperature at exothermic peak on 70mL	29°C	141°C	255°C	180°C
Gel time on a 2mm thick laminate	14h11min	6h13min	1h43min	1h20min

Reactivity measurements made on Trombotech®

CURING & POST CURING

The 1000 system is designed to cure at room temperature. In order to obtain a material at the maximum of its mechanical properties, the following curing cycles may be followed.

Systems	1000 / 1003	1000 / 1006	1000 / 1008	1000 / 1015
T _G after 14 days at 23°C	47°C	48°C	51°C	48°C
T _G after 2h at 80°C+ 4h at 120°C	68°C	77°C	108°C	70°C

MECHANICAL PROPERTIES

Systems	1000 / 1003	1000 / 1006	1000 / 1008	1000 / 1015
Shore D hardness after 14 days at 23°C	84	84	85	85
Shore D hardness after 16h at 60°C	86	85	87	86

Hardness according to ISO 868

Resin 1000

Hardeners 1003, 1006, 1008 & 1015

PACKAGING

1000 / 1003 :

- 1.32kg : (1kg+0.32kg)
- 6.6kg : (5kg+1.6kg)
- 39.6kg (30kg+9.6kg)
- 264kg (200kg+3x21.33kg)
- 1320kg (1000kg + 2x160kg)

1000 / 1006 :

- 1.27kg (1kg+0.27kg)
- 6.35kg (5kg+1.35kg)
- 38.1kg (30kg+8.1kg)
- 254kg (200kg+2x27kg)
- 1270kg (1000kg+2x135kg)

1000 / 1008 :

- 1.165kg (1kg+0.165kg)
- 5.825kg (5kg+0.825kg)
- 34.95kg (30.kg+4.95kg)
- 233kg (200kg+2x16.5kg)
- 1330kg (1000kg+2x165kg)

1000 / 1015 :

- 90kg (2x30kg+30kg)
- 290kg (200kg+3x30kg)

TRANSPORT & STORAGE

Shelf life is minimum one year in sealed containers as provided. Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area.

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, hardener, solvent or dust 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.

The data provided in this document is the result of tests and is believed to be accurate. We do not accept any responsibility over the mishandling of these products and our liability is limited strictly to the value of the products we manufacture and supply.