

ESD (Electro Static Discharge) self-leveling epoxy system with high mechanical and chemical resistance for industrial floors in EPA areas.

#### **MATERIAL DESCRIPTION**

MasterTop 1273 ESD is an ESD (Electro Static Discharge) type epoxy self-levelling system according to CEI EN 61340-5-1 requirements.

#### FIELDS OF APPLICATION

MasterTop 1273 ESD, finds applications in many industrial sectors in ESD areas where it is necessary to protect electronic devices from electrostatic phenomena in accordance with the provisions of CEI EN 61340-5-1 (Protection of electronic devices from electrostatic phenomena: general requirements), such as example:

- computer laboratories;
- electronics and pharmaceutical industry;
- operating rooms;
- environments identified by symbols relating to EPA (Electro Static Discharge Protected Area).



### FEATURES AND BENEFITS

MasterTop 1273 ESD, has the following characteristics:

- meets the requirements of CEI EN 61340-5-1 (Protection of electronic devices from electrostatic phenomena - General requirements) and the relative acceptance limits:
  - resistance to earth <109 Ω according to CEI EN 61340-4-1 "Test methods standardized for specific applications - Electrical resistance of floor coverings and floors installed";
  - Floor-Footwear system electrical resistance  $<109 \Omega$  according to CEI EN 61340-4-5);
  - voltage generated by the human body (walking test: <± 100 V, CEI EN 61340-4-5);</li>
- AgBB certified for low emissions in indoor work environments;
- certified for "Clean Room" clean rooms according to EN ISO 14644-4;
- adheres monolithically to the substrate;
- it is not solvent-based;
- fire reaction class Bfl-S1 UNI EN 13501-1;
- has high mechanical strengths.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the system is provided with the CE marking according to UNI EN 13813 and the relative DoP (Declaration of Performance).



### CONSUMPTION

Consumption depends on the roughness of the substrate. The values indicated assume a smooth surface and a substrate temperature between 15 and 25°C; very rough surfaces and lower temperatures increase consumption. Actual consumption must be assessed by applying it to a test area.

### STORAGE

Store the material in the original containers, in a dry and covered place at a temperature between 15 and 25°C. Do not expose to direct sunlight.

#### PACKAGING

Product	Pack	Kg
MasterTop P 604	Tin	17,8 (A+B)
MasterSeal P 687W AS	Tin	15
MasterTop BC 372 ESD	Tin	31,1 (A+B)



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System Build Up 1 Products and consumptions. Thickness 1,5 – 2.5 mm kg/m <sup>2</sup>						
MasterTop P 604 (o MasterTop P 622)			Saturation primer	0,3-0,5		
Laying of the conductive strips						
MasterTop P 687W AS		Conductive primer		0,12 - 0,15		
MasterTop BC 372 ESD	rTop BC 372 ESD A		ntistatic self-leveling	2		
Essential characteristic in accordance to UNI EN 13813		Limits and classes	Performances			
Concrete adhesion	UNI EN 13892/8 su supporto MC (0,40) UNI EN 1766.		Class (MPa): B0,5, B1, B1,5, B2	Class B >1.5		
Abrasion resistance	UNI EN 13892/4 (BCA)		AR6, AR5, AR05	Class AR0.5		
Impact resistance	UNI EN ISO 6272		Class IR J (J impact energy N⋅m)	IR4		
Essential characteristic in accordance to UNI EN 1504/2			Limits and classes	Performances		
Slip / creep resistance	UNI EN 13036/4		Class I: wet test for internal surfaces: > 40 units; Class II: dry test for internal surfaces: > 40 units	Classe II		
Fire behaviour	UNI EN 13501/1		A1n, A2n, Bn, Cn, Dn I, E1n, S1. S2	B <sub>fl</sub> -S1		



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#### **APPLICATION SHEET**

For every application detail (preparation of the substrate, primer and other parameters) refer to the "MasterTop Industrial Floors Application Manual".

#### **CHARACTERISTICS OF THE SUPPORT**

The cementitious substrate must have minimum compressive strength class C20 / 25 for concrete according to UNI EN 206/1 and C25 for cementitious screeds CT according to UNI EN 13813.

In the case of screeds of other chemical nature required by UNI EN 13813, such as those based on calcium sulphate CA or magnesite MA or other types, contact the technical service of Master Builders Solutions for further information.

#### SUPPORT REPAIR AND LEVELING

Before applying the coating, it is essential to check that the concrete surfaces to be protected are not degraded and / or contaminated by oils, greases or other substances, in which case the incoherent and contaminated concrete must first be removed and then restored with MasterTop 514 QD.

### PREPARING THE SUBSTRATE

The surface must be prepared by shot peening or sandblasting. Other specific techniques can also be used in specific cases (the choice of the same is to be evaluated following a site visit). Dust the surface before proceeding with the application of the primer. MasterTop 1273 ESD tolerates a maximum substrate humidity of 4%.

#### HUMIDITY AND CAPILLARY RISING

The MasterTop 1273 ESD system cannot be applied directly to surfaces that are damp and / or without a vapor barrier or subject to rising damp. In such situations it is necessary to provide for the application of the specific primer MasterSeal P 385 at a rate of 1.5 kg / m<sup>2</sup> or of MasterTop 514 QD in the epoxy-cement version (3k) for a minimum thickness of 3 mm.

#### TEMPERATURE

MasterTop 1273 ESD must be applied when the ambient temperature (minimum 8°C and maximum 30°C) remains constant or decreases, since this device allows to reduce the risk of "blowing" linked to the escape of air present in the porosity of the concrete. In addition, this temperature

must always be  $3^{\circ}$ C higher than the dew point from the time of application and for at least the next 24 hours (at  $15^{\circ}$ C).

#### **PRIMER MasterTop P604**

Before mixing, bring components A and B to a temperature between 15 and 25°C. Pour the entire contents of part B into the container of part A. Hand mixing is not allowed. Mix with an electric propeller mixer at very low speed (approx. 300 rpm) for not less than 3 minutes. Scrape the sides and bottom of the container several times until completely mixed.

The mixer blades must always be immersed in the product to avoid introducing air bubbles. Mix the material only inside the original container. Once a homogeneous consistency is obtained, pour the resin into a new container and then mix for another minute.

Technical Information			
Mixing ratio	100 A / 27 B		
Density at 20°C	ca 1,44 kg/liter		
Kinematic viscosity	ca. 1100 mPa·s		
Workability time	12°C: 60 minutes		
	23°C:30 minutes		
	30°C:15 minutes		
Maximum relative humidity	10°C: 75%		
	23°C: 85%		
Recoating time	10°C: 16 – 48 h		
	23°C: 6 – 48 h		
	30°C: 3 – 24 h		

After mixing, apply MasterTop P 604 on the substrate by distributing it with a rubber squeegee and finishing it with a roller.

### LAYING THE CONDUCTIVE BANDS

Both copper tapes and ground connections must be applied.

For an optimal distribution of electrostatic charges, it is recommended to create a regular grid of copper strips with a 10 m x 10 m mesh or in any case one per compartment, if smaller. At the junction points, the strips are superimposed on each other. The strips of adhesive copper tape must be connected to the main grounding points. The purpose of the tape is to ensure that each individual area of laying the coating is connected to the main grounding point and that each package within the laying area of the MasterTop 1273 ESD flooring is



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connected to the grounding point. However, it is good practice to install more than one connection even in small areas, this for greater safety, in the event that a connection should be damaged.

The larger the area to be treated, the greater the number of ground connections to be made (we recommend one every 10 m minimum). The design of the earthing points obviously remains a specific competence of the Designer. Single rooms can be connected to the ground together with corridors, etc.

On large free surfaces, the idea of placing connections at each corner must be considered. In addition, special attention must be paid to surfaces divided by construction or structural joints, these must be connected by copper tape, or considered as isolated areas to be grounded individually.

Before proceeding with the installation of the covering, clean the installed copper strips with a cloth soaked in solvent, to remove any traces of adhesive or other impurities that can cause defects on the applied covering.

### CONDUCTIVE PRIMER MasterTop P687 W AS

Mix the two components separately then pour the contents of the can of A into the can of component B and homogenize the system with an electric mixer at 300 rpm for at least three minutes until completely homogenized.

Technical Information			
Mixing ratio	2A / 3B		
Solid content	35%		
Density	ca 1.07 kg/liter		
Recoating time	10°C: 18 – 48 h		
	20°C: 12 – 36 h		
	30°C: 8 – 24 h		
Maximum relative humidity	75% a 23°C		
Workability time	60 minutes a 23°C		
Complete hardening	5 days at 20°C		

Once a homogeneous consistency is obtained, pour the resin into a new container and then mix for another minute. MasterTop P 687W AS must not be diluted. The mixed material can be applied to the surfaces by

roller, brush, or it can be spread with a trowel and finished with a roller.

## ESD SELF-LEVELING APPLICATION MasterTop BC 372 ESD

Mix the two components separately with an electric mixer, then pour all of component B into the can of component A and mix until a homogeneous system is obtained. After obtaining a homogeneous consistency, pour the resin into a new container and mix for another minute.

Technical Information			
Mixing ratio	82 A / 18 B		
Density at 20°C	ca. 1,54 kg/liter		
Kinematic viscosity	ca. 2200 mPas		
Workability time	30 minuti a 23°C		
Maximum relative humidity	75%		
Recoating time	23°C: 15-48 ore		
Complete hardening time at 20°C	5 gg		

After mixing, apply MasterTop BC 372 ESD on the substrate by distributing it with a toothed doctor blade (V-shaped teeth or spatula). To facilitate the escape of air bubbles that may be incorporated into the product, it is necessary to pass the surface of the material with a specific bubble-breaking roller 5 - 10 minutes after applying the product (ask for detailed information on the type of roller which must be only and only the one in figure, before planning the construction site).



Protect from contact with humidity for the first 24 hours (at 20°C).

### **CLEANING**

Tools used for mixing and applying the material can be cleaned with epoxy thinner.



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#### **FLOOR CLEANING**

For every detail relating to the cleaning aspects of the floor, always refer to the specific document "MasterTop Linea Industrial Cleaning".

#### WARNINGS

MasterTop products are for professional use. For further information, consult the Master Builders Solutions Italia Spa technician area.

### SAFETY INSTRUCTION

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

#### **OTHER SERVICES**

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website <u>www.master-builders-solutions.com/it-it</u> or contact <u>infomac@mbcc-group.com</u>.

Scan the QR code to visit the product page and download the latest version of this datasheet.



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.

#### Master Builders Solutions Italia Spa

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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.