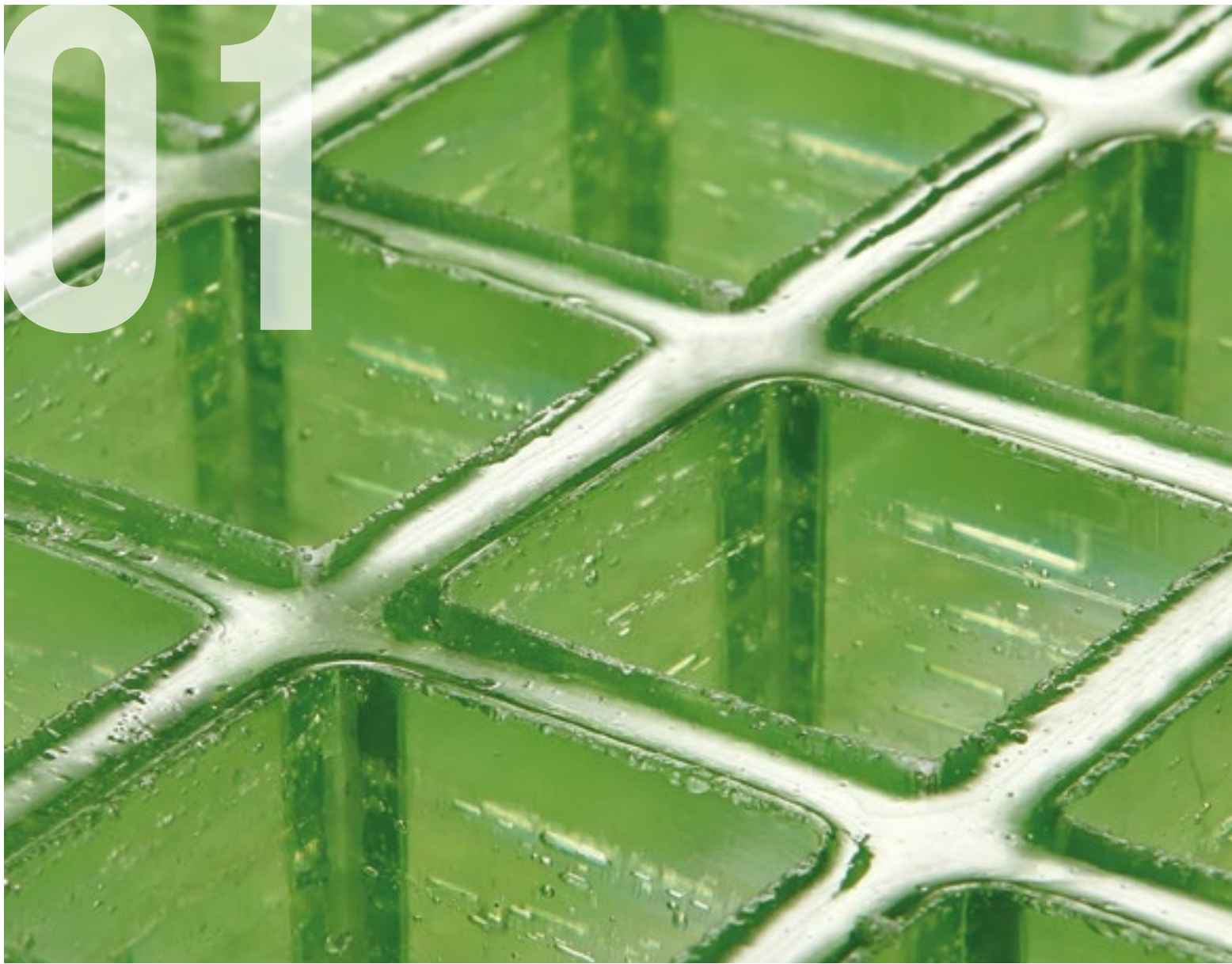


Fiberglass Reinforced Polymer  
**CATALOGUE**

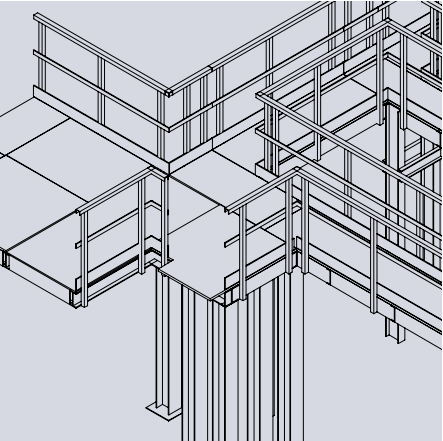


# 01



## SERVICES

### ENGINEERING



### MECHANICAL TESTS



### CHEMICAL RESISTANCE TEST



# ABOUT US



Since its inception in 1977, M.M. has been operating in the **glass fibre reinforced plastics (FRP)** industry, producing **high quality gratings and structures** (handrail systems, walkways, stairways, ladders, fences, gates, etc.). The intrinsic properties of FRP allow to create light, resistant and easy to install structures that do not require maintenance and are characterised by great versatility of use.

The company offers **customized solutions and additional services** such as technical design, structural calculation for composite materials, chemical and mechanical resistance tests, any type of cut to size, shaping and finishing.

Every phase of the company process, from design to production, from the quotation to the follow-up service, is focused on **customer satisfaction**.

**HIGH QUALITY RAW MATERIALS**

**CUSTOMIZED SOLUTIONS**

**RESEARCH AND INNOVATION**

## CUTTING AND SHAPING



## SURFACE TREATMENTS



## VERIFICATION OF PRODUCT CONFORMITY





# 05



## HOW TO CHOOSE A LADDER



LADDERS  
TYPE 1



LADDERS  
TYPE 2



LADDERS  
TYPE 3

The choice between type 1, type 2 or type 3 ladders depends on the scope of use, the length and type of support to which the ladder is to be fixed. Our Technical Department is always available to help the customer to make the best choice.

# LADDERS

Ladders are entirely made of isophthalic resin and fibreglass (FRP) and their wall installation is performed through FRP or stainless steel brackets.

Also the screws for assembling the safety cage are made of stainless steel.

Fixed vertical ladders are of different types:

1. **ladders serving machinery or plants** in accordance with UNI EN ISO 14122-1/4 and tested according to UNI EN 131-2 standard;
2. ladders suitable for use in **direct contact with drinking water**;
3. double stringer ladders **for inspection manholes with the CE marking** in accordance with UNI EN 14396 standard.

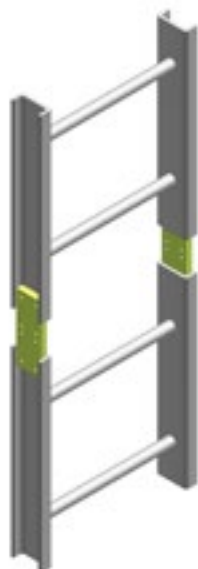
**LIGHTWEIGHT**

**EASY TO INSTALL**

**MAINTENANCE-FREE**



**JUNCTION  
FOR LADDER  
TYPE 1**



**JUNCTION  
FOR LADDER  
TYPE 3**

For lengths over 6.000 mm, ladders are supplied in two parts with a special junction system.

## LADDERS

Fixed service ladders are used for inspection and access to machinery and plants and for accessing areas closed by trap doors.

### TYPE 01

CODE	<b>CSCALA1</b>
FIXING SUPPORT	rectangular profile 85x25x3 mm
RUNG	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
SAFETY CAGE HOOPS	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	450 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>2.000 mm</b>
MAXIMUM HEIGHT	10.000 mm*

### TYPE 02

CODE	<b>CSCALA2</b>
FIXING SUPPORT	rectangular profile tipo 58x25x3 mm
RUNG	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	450 mm
SPACING BETWEEN RUNGS	300 mm
MAXIMUM BRACKETS' SPACING	<b>1.200 mm</b>
MAXIMUM RECOMMENDED HEIGHT	3.000 mm

### TYPE 03

CODE	<b>CSCALA3</b>
FIXING SUPPORT	"C" type profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
SAFETY CAGE HOOPS	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>5.000 mm</b>
MAXIMUM HEIGHT	10.000 mm*

\*for heights over 6.000 mm it is necessary to separate the ladder into two parts and use the junction element



## LADDERS WITH FRONT EXIT

This type of ladder has a widening space at the exit of 1,100 mm in height in order to facilitate the operator's exit and can be supplied with a gate and a safety step.

### TYPE 01 WITH FRONT EXIT

<b>CODE</b>	<b>CSCALA1UF</b>
<b>FIXING SUPPORT</b>	rectangular profile 85x25x3 mm
<b>RUNG</b>	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
<b>STANDARD SAFETY CAGE HOOPS</b>	diameter 700 mm
<b>SAFETY CAGE HOOP FOR FRONT EXIT</b>	diameter 700 mm
<b>SAFETY CAGE VERTICAL ELEMENTS</b>	flat profile 40x5 mm
<b>PROFILE AND SAFETY CAGE COLOUR</b>	grey RAL 7035
<b>RUNG USABLE WIDTH</b>	400 mm
<b>LADDER TOTAL WIDTH</b>	450 mm
<b>SPACING BETWEEN RUNGS</b>	300 mm
<b>SAFETY CAGE TOTAL HEIGHT</b>	total height minus 2.500 mm
<b>MAXIMUM HOOPS' SPACING</b>	1.000 mm
<b>MAXIMUM BRACKETS' SPACING</b>	<b>2.000 mm</b>
<b>MAXIMUM HEIGHT</b>	10.000 mm*
<b>EXIT AREA</b>	1.100 mm height from last rung usable width 680 mm
<b>SAFETY ACCESSORIES</b>	Safety gate and safety step



### TYPE 03 WITH FRONT EXIT

<b>CODE</b>	<b>CSCALA3UF</b>
<b>FIXING SUPPORT</b>	"C" type profile 90x35x8 mm
<b>RUNG</b>	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
<b>STANDARD SAFETY CAGE HOOPS</b>	diameter 700 mm
<b>SAFETY CAGE HOOP FOR FRONT EXIT</b>	diameter 700 mm
<b>SAFETY CAGE VERTICAL ELEMENTS</b>	flat profile 40x5 mm
<b>PROFILE AND SAFETY CAGE COLOUR</b>	grey RAL 7035
<b>RUNG USABLE WIDTH</b>	400 mm
<b>LADDER TOTAL WIDTH</b>	470 mm
<b>SPACING BETWEEN RUNGS</b>	300 mm
<b>SAFETY CAGE TOTAL HEIGHT</b>	total height minus 2.500 mm
<b>MAXIMUM HOOPS' SPACING</b>	1.000 mm
<b>MAXIMUM BRACKETS' SPACING</b>	<b>5.000 mm</b>
<b>MAXIMUM HEIGHT</b>	10.000 mm*
<b>EXIT AREA</b>	1.100 mm height from last rung usable width 680 mm
<b>SAFETY ACCESSORIES</b>	Safety gate and safety step



\*for heights over 6.000 mm it is necessary to separate the ladder into two parts and use the junction element

## LADDERS WITH LATERAL EXIT

This type of ladder is used in case of lateral exit compared to the climbing direction.

### TYPE 01 WITH LATERAL EXIT

CODE	<b>CSCALA1UL</b>
FIXING SUPPORT	rectangular profile 85x25x3 mm
RUNG	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
STANDARD SAFETY CAGE HOOP	diameter 700 mm
HOOP FOR SAFETY CAGE WITH LATERAL EXIT	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	450 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>2.000 mm</b>
MAXIMUM LADDER HEIGH	10.000 mm*
EXIT AREA	1.680 mm over the landing height

### TYPE 03 WITH LATERAL EXIT

CODE	<b>CSCALA3UL</b>
FIXING SUPPORT	"C" profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface 28x29 mm rectangular profile with non-slip surface
STANDARD SAFETY CAGE HOOP	diameter 700 mm
HOOP FOR SAFETY CAGE WITH LATERAL EXIT	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>5.000 mm</b>
MAXIMUM LADDER HEIGH	10.000 mm*
EXIT AREA	1.680 mm over the landing height



\*for heights over 6.000 mm it is necessary to separate the ladder into two parts and use the junction element



## LADDER WITH RESTING PLATFORM

The use of intermediate landing as resting platforms is mandatory for ladders whose height exceeds 10 meters.

### RESTING PLATFORM

MINIMUM WIDTH	700 mm
STRUCTURE	"C" type profile 150x45x8 mm grating type "SCH 52/30"
STRUCTURAL BRACKETS	minimum 2 Type "I" profile 150x75x8 mm
SAFETY CAGE SUPPORTS	"Q" profile 50x50x5 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILES AND SAFETY CAGE COLOUR	grey RAL 7035
MAXIMUM HOOPS' SPACING	1.000 mm
SIDE EXIT HEIGHT	2.000 mm from last rung
MAXIMUM LADDER HEIGHT	6.000 mm



## LADDERS SUITABLE FOR CONTACT WITH DRINKING WATER

M.M. produces ladders suitable for contact with drinking water pursuant to **Ministerial Decree 174/2004** (implementing the European Directive 98/83/EC DWD - Drinking Water Directive), **certified by the Italian Ministry of Health and by the French General Health Department** ("ACS" - Attestation de Conformité Sanitaire), easily recognizable due to **the profile with red filigree**.



### TYPE 03 ACS

CODE	<b>CSCALA3ACS</b>
FIXING SUPPORT	"C" profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface
STANDARD SAFETY CAGE HOOP	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 50x4 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035 with red filigree
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>5.000 mm</b>
MAXIMUM LADDER HEIGHT	10.000 mm*



\*for heights over 6.000 mm it is necessary to separate the ladder into two parts and use the junction element

## TYPE 03 WITH ACS FRONT EXIT

CODE	CSCALA3UFACS
FIXING SUPPORT	"C" type profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface
STANDARD SAFETY CAGE HOOP	diameter 700 mm
SAFETY CAGE HOOP FOR FRONT EXIT	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035 with red filigree
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>5.000 mm</b>
MAXIMUM HEIGHT	10.000 mm*
EXIT AREA	1.100 mm height from last rung usable width 680 mm
SAFETY ACCESSORIES	Safety gate and safety step



## TYPE 03 WITH ACS LATERAL EXIT

CODE	CSCALA3ULACS
FIXING SUPPORT	"C" type profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface
STANDARD SAFETY CAGE HOOP	diameter 700 mm
SAFETY CAGE HOOP FOR LATERAL EXIT	diameter 700 mm
SAFETY CAGE VERTICAL ELEMENTS	flat profile 40x5 mm
PROFILE AND SAFETY CAGE COLOUR	grey RAL 7035 with red filigree
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
SAFETY CAGE TOTAL HEIGHT	total height minus 2.500 mm
MAXIMUM HOOPS' SPACING	1.000 mm
MAXIMUM BRACKETS' SPACING	<b>5.000 mm</b>
MAXIMUM HEIGHT	10.000 mm*
EXIT AREA	1.680 mm over the landing height



\*for heights over 6.000 mm it is necessary to separate the ladder into two parts and use the junction element

## LADDERS FOR INSPECTION MANHOLES **CE**

FRP ladders with the CE marking in accordance with **UNI EN 14396** standard, are intended for fixed and permanent installation inside inspection manholes for waste water, rain water, surface water (subject to specific national regulations) and for the drinking water industry.

To facilitate the entry and exit of the operator, we recommend using a safety extension.

They are **marked with a special label** that identifies them in accordance with **Regulation (EU) 305/2011**.

### LADDER FOR INSPECTION MANHOLES TYPE 01

CODE	<b>CSCALA1CE</b>
FIXING SUPPORT	rectangular profile 85x25x3 mm
RUNG	28x21,3 mm diameter with non-slip surface
PROFILE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm*
LADDER TOTAL WIDTH	450 mm*
SPACING BETWEEN RUNGS	300 mm
MAXIMUM BRACKETS' SPACING	<b>3.000 mm</b>
MAXIMUM LADDER HEIGHT	6.000 mm

\*on request they can be supplied with different widths (min 300 max 600 mm)

### LADDER FOR INSPECTION MANHOLES TYPE 02

CODE	<b>CSCALA2CE</b>
FIXING SUPPORT	rectangular profile 58x25x3 mm
RUNG	28x21,3 mm diameter with non-slip surface
PROFILE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm*
LADDER TOTAL WIDTH	450 mm*
SPACING BETWEEN RUNGS	300 mm
MAXIMUM BRACKETS' SPACING	<b>2.100 mm</b>
MAXIMUM LADDER HEIGHT	6.000 mm

\*on request they can be supplied with different widths (min 300 max 600 mm)

### LADDER FOR INSPECTION MANHOLES TYPE 03

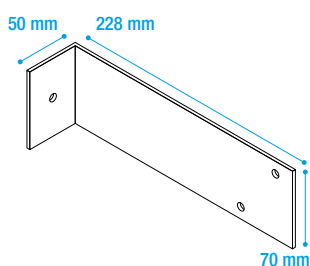
CODE	<b>CSCALA3CE</b>
FIXING SUPPORT	"C" type profile 90x35x8 mm
RUNG	28x21,3 mm diameter with non-slip surface
PROFILE COLOUR	grey RAL 7035
RUNG USABLE WIDTH	400 mm
LADDER TOTAL WIDTH	470 mm
SPACING BETWEEN RUNGS	300 mm
MAXIMUM BRACKETS' SPACING	<b>3.000 mm</b>
MAXIMUM LADDER HEIGHT	6.000 mm



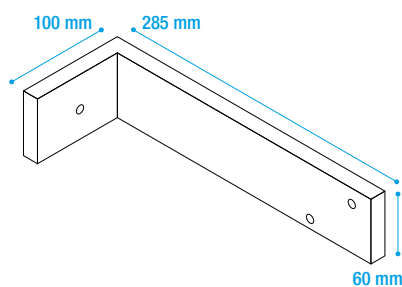
## FIXING ACCESSORIES

Fixing brackets are available in stainless steel or FRP. In addition to the specified standard sizes, they can also be supplied with different dimensions depending on the type of ladder and type of the support to which they are to be fixed. The Technical Department is always available to assist the customer in defining the correct fixing brackets for the type of ladder and most suitable for the indicated use. The position of the fixing holes and the size of the counterplates depend on the type of ladder to be installed.

### BRACKETS FOR WALL FIXING

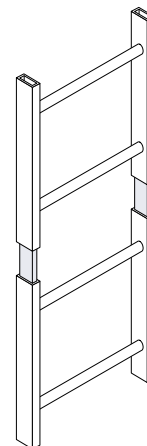


CODE	56ASTAFFA5
MATERIAL	acciaio inox
SIZE	228x50x70 mm
THICKNESS	3 mm



CODE	CSTAFFA12
MATERIAL	FRP
SIZE	285x100x60 mm
THICKNESS	15 mm

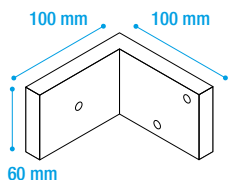
### JOINTS



#### JOINT FOR LADDER TYPE 1

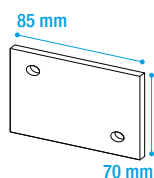
CODE	GGIUNZIONE1
MATERIAL	FRP
SIZE	200x78 mm
THICKNESS	18 mm

### BRACKETS FOR FLOOR FIXING



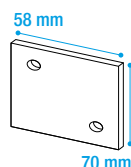
CODE	CSTAFFA13
MATERIAL	FRP
SIZE	100x100x60 mm
THICKNESS	15 mm

### COUNTERPLATES FOR FIXING BRACKETS



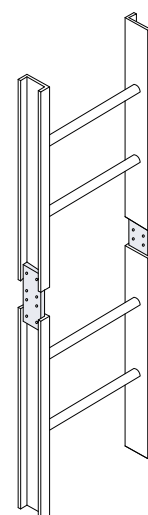
#### FOR LADDER TYPE 1

CODE	CPIASTRA1
MATERIAL	FRP
SIZE	85x70 mm
THICKNESS	3 mm



#### FOR LADDER TYPE 2

CODE	CPIASTRA2
MATERIAL	FRP
SIZE	58x70 mm
THICKNESS	3 mm



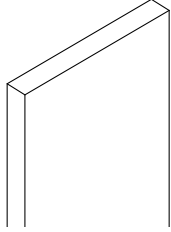
#### JOINT FOR LADDER TYPE 3

CODE	GGIUNZIONE2
MATERIAL	FRP
SIZE	230x72 mm
THICKNESS	15 mm



## SAFETY CAGE COMPONENTS

## FLAT PROFILES



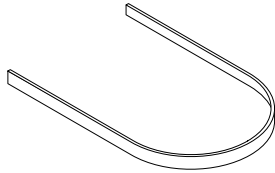
## PROFILE 40x5 mm

CODE	53P405I
MATERIAL	FRP
DIMENSIONS	40x5 mm standard bar length 6 m
WEIGHT	0,36 kg/m
COLOUR	grey RAL 7035

## PROFILE 40x5 mm ACS

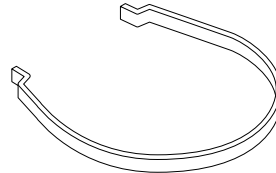
CODE	53P504IX
MATERIAL	FRP
DIMENSIONS	50x4 mm standard bar length 6 m
WEIGHT	0,36 kg/m
COLOUR	grey RAL 7035 with red filigree

## HOOPS



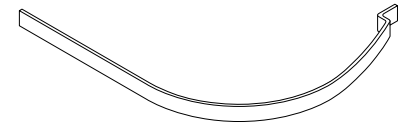
## HOOP FOR FRONT EXIT\*

CODE	5506CERCHIO7035
MATERIAL	FRP
DIMENSIONS	Ø 700 mm L 1.200 mm
WEIGHT	1,30 kg
COLOUR	grey RAL 7035



## STANDARD HOOP\*

CODE	5504CERCHIO7035
MATERIAL	FRP
DIMENSIONS	Ø 700 mm
WEIGHT	0,90 kg
COLOUR	grey RAL 7035



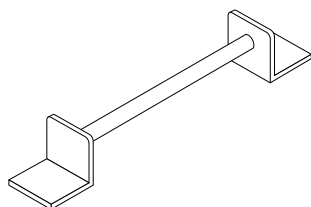
## HOOP FOR LATERAL EXIT\*

CODE	5505CERCHIO7035
MATERIAL	FRP
DIMENSIONS	Ø 700 mm L 1.200 mm
WEIGHT	1,00 kg
COLOUR	grey RAL 7035

\*also available ACS type

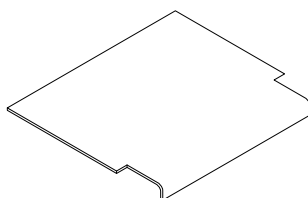
## SAFETY ACCESSORIES

## HANDLE



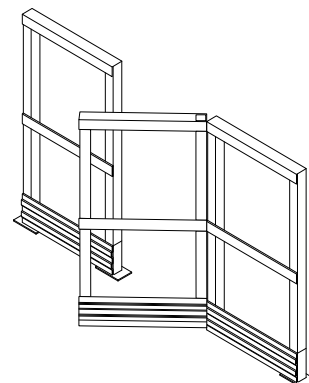
CODE	CMANIGLIAFRP
MATERIAL	FRP
SIZE	max length 440 mm
COLOUR	grey RAL 7035

## SAFETY STEP



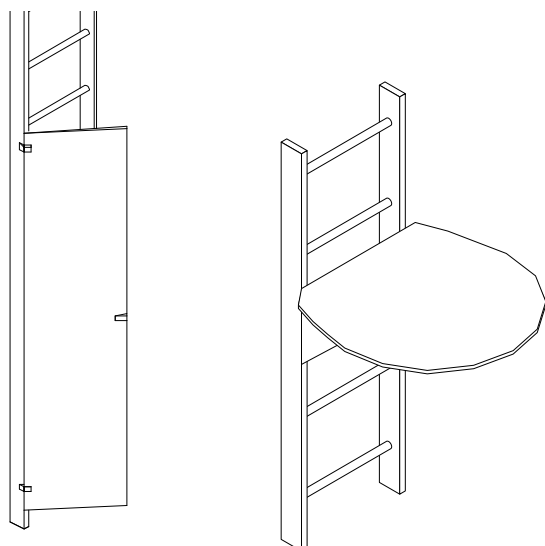
CODE	55STCN40
MATERIAL	FRP
SIZE	470x345 mm
COLOUR	4 mm

## GATE



CODE	CPORTELLO
MATERIAL	FRP with spring hinges
SIZE	max length 800 mm
COLOUR	grey RAL 7035

## LADDER CLOSURE



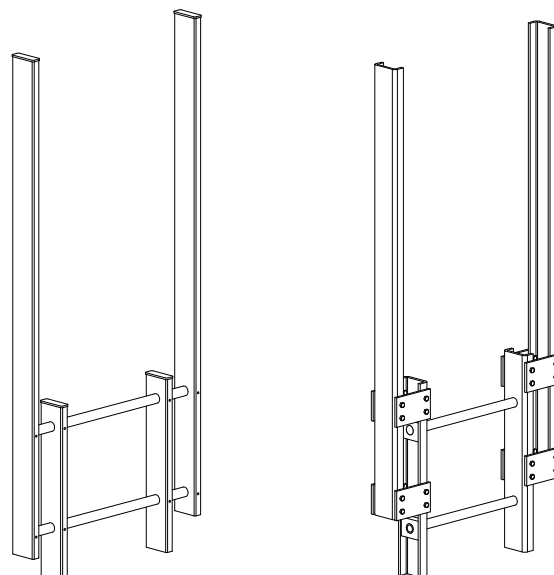
## VERTICAL CLOSURE

CODE	CCHIUSURASCALA1
MATERIAL	FRP
SIZE	2000x450/470 mm
COLOUR	grey RAL 7035

## HORIZONTAL CLOSURE

CODE	CCHIUSURASCALA2
MATERIAL	FRP
SIZE	Ø 700 mm
COLOUR	grey RAL 7035

## WIDENING SPACE FOR LADDERS



## WIDENING FOR LADDER TYPE 1

CODE	CSLARGO1
MATERIAL	FRP
COLOUR	grey RAL 7035

## WIDENING FOR LADDER TYPE 3

CODE	CSLARGO3
MATERIAL	FRP
COLOUR	grey RAL 7035

## **M.M. SRL**

ADMINISTRATIVE OFFICE AND PRODUCTION PLANT  
Via Antonio Zanussi, 300/302, 33100 Udine - Italy  
ph. +39 0432 522970 - fax +39 0432 522253

info@mmgrigliati.it - VAT No. and Tax Code: 02984500302

## PRODUCTION PLANT

Via Antonio Zanussi, 311, 33100 Udine - Italy

**[WWW.MMGRIGLIATI.COM](http://WWW.MMGRIGLIATI.COM)**

