

## Single sided road barrier H1

# Installation manual

Name of the barrier: H1BL-MARC2013



Installation Manual Rev.003 – 20th september 2013

Done by : Mauro Eng. Monteleone

Checked by da : Molinari Eng. Giacomo

Approved by : Mauro Eng. Monteleone

MARCEGAGLIA buildtech S.r.l.

**Administration offices:** via Milano, 41 • 23871 Lomagna, Lecco - Italy

ph. +39 . 039 9221 800 • fax +39 . 039 9221 830 • a.buildtech@marcegaglia.com • www.marcegaglia.com

**Sales offices:**

viale Sarca, 336 - 20126 Milano - Italy

ph. +39 . 02 66 17 171 • fax +39 . 02 66 17 17 22 • buildtech@marcegaglia.com

strada Roveri, 4 • 15068 Pozzolo Formigaro, Alessandria - Italy

ph. +39 . 0143 77 61 • fax +39 . 0143 77 63 53 • buildtech@marcegaglia.com

via Giovanni della Casa, 12 • 20151 Milano - Italy

ph. +39 . 02 30 704.1 • fax +39 . 02 33 402 706 • buildtech@marcegaglia.com

**Registered seat:** via Giovanni della Casa, 12 • 20151 Milano, Italy

P. IVA 01929950200 • Cod. IVA UE IT01929950200

Capitale sociale Euro 100.000, 00 i.v.

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### 1. General information

The present document is the assembly manual of the above mentioned 2-wave steel barrier named: H1BL-MARC2013.

The system (see drawing MB1842 rev A) is done by:

- "C" post 120x80x4 drawing MB-1843
- 2-wave beam 2 mm thickness drawing 0311/45

All the operations and times here described are studied for the correct assembly and functioning of the barrier. Any change should be agreed upon and authorized by Marcegaglia Buildtech s.r.l.

In particular, the times of complete tightening of the screws, necessary to prevent assembly problems in the next steps, should be carefully complied with.

The system (see drawing MB 1842 rev 1) is done by:

- 2 wave beam 2 mm thickness Pos. 1
- C post 120x55x30; 4 mm thickness Pos. 2

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## 2. Assembly conditions

Barrier H1BL-MARC2013 is expressly studied to be used as a single sided to be installed on the ground.

Accessibility to the installation areas with the pile-driving vehicle and the absence of obstacles both above and beneath the surface (trees, walls or pipes, subservices, etc.). should be verified.

## 3. Preliminary operations

For an efficient installation, we recommend to position on the ground the necessary material along the barrier installation line.

In particular, when the section to be installed has been defined, we recommend to place onto the ground horizontally the 2-wave beams with a reference wire (plumb-wire) along the post line.

The positioning should be performed accurately especially in correspondence with the overlapping of the beams.

At this point, the first post of the section may be driven with the aid of a pile-driving vehicle and then a reference wire is tightened assuring the correct alignment of the next posts.

During the driving of the first post, also its height should be controlled in order to obtain the correct height of the finished barrier.

Normally, when the required height is reached, the position of the pile-driver is considered as referential to have an accurate element which could show how much to drive all the other posts.

#### 4. Installation of the posts

If the above prescriptions have been complied with, the positioning of posts becomes fast and precise since:

- the longitudinal step is given by the position of the holes on the beams placed onto the ground
- the alignment is assured by a reference wire
- the height is assured by the reference on the pile-driver.

The height of the post could be wrong for a value equal to +/- 1 cm, since there are suitable slots to install correctly the 2-wave beam.

The verticality of the post in the two directions should be cared and is obtained by suitable shifts of the pile-driving machine.

#### 5. Installation of the barrier

The 2-wave beam is raised (being careful to start from the bottom of the section in order to obtain the correct overlapping of the beams) and is fixed only to the first and intermediate post.

The bolt to fix the beam at the third post is positioned only when the next beam is overlapped. This fixing consists of M12 bolt, screw-nut, washer and rectangular plate of the slot protection to be placed in front of the 2-wave beam.

At this point, it is also possible to put the bolts as connection of the beam (8 complete with screw-nut and washer).

When the assembly of the section is concluded, it is necessary to align vertically the beams so that the whole barrier is at the same height or however at the same distance from the road surface.

Normally, this operation is carried out by sighting the first beam and progressively correcting the next beams by tightening the bolts which connect the beam to the post with a torque equal to 10 Nm +/- 1 Nm.

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Afterwards, it is possible to tighten the connection bolts between the 2-wave beams with a torque equal to 40 Nm +/- 5 Nm.

## 6. Installation on curves

The barrier can be installed on curved section with a minimum radius equal to 60 meters because there are slots which allow this installation with standard components.

Under this measure, it is necessary to bend the beam according to the site information or based on a specific drawing.

## 7. Inspection and Maintenance

The barrier in question does not require maintenance, under standard conditions of use.

It is suggested to test, every two years, the tightening of the bolts because, in case of vibrations due to traffic, some loosening may occur.

In this case a further tightening is required to reach again the above mentioned requirements.

## 8. Durability

All elements are treated with hot dip galvanizing process, according to UNI 1461, and covered with a minimum thickness as a function of the thickness of the various elements.

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## 9. Technical Standards

UNI EN 1317-5 / 2007 (road safety barriers)

UNI EN 22768th: 1996 (tolerances)

## 10. Attachments and annexes

Assembly drawing of the H1BL-MARC2013 ( MB1842 rev A).

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