

## SAFEEND P4

### WORKING DESCRIPTION INSTALLATION, REPAIRS AND MAINTENANCE



## Working Description

<b>Prepared by:</b>	<b>Doc. no.:</b>
Fredrik Sangö	SafeEnd P4

### Introduction/data:

SafeEnd P4 is a terminal tested according ENV 1317-4, performance class P4.

Performance class	P4
Permanent lateral displacement (approach side)	X1
Permanent lateral displacement (departure side)	Y1
Exit box	Z1
ASI value	1.1
Impact severity class	B

The installation work can be broken down into the following 10 steps, which will be processed individually in the work description in the order shown below.

- 1) Planning
- 2) Unloading of material
- 3) Proprietary inspection
- 4) Safety
- 5) Establishment
- 6) Installation
- 7) Repairs to zinc damage
- 8) Demobilisation
- 9) Repairs
- 10) Maintenance

Chap. 11 includes additional information (Drawings and Declaration of Conformity).

Rev. no.	Date	Signature	Reason for revision
		<i>Fredrik Sangö</i>	
A	2015-06-08	Fredrik Sangö	Approved by SafeRoad Birsta

**Contents**

1	PLANNING .....	4
2	UNLOADING OF MATERIAL .....	4
3	PROPRIETARY INSPECTION .....	4
4	SAFETY .....	5
5	ESTABLISHMENT .....	5
6	INSTALLATION .....	5
7	REPAIRS TO ZINC DAMAGE .....	6
8	DEMOBILISATION .....	6
9	REPAIRS .....	7
10	MAINTENANCE .....	7
11	OTHER INFORMATION .....	8

## 1 PLANNING

It is at this point that the quality and flexibility of the project is determined. Well planned installation routines are a good basis when you are looking to achieve high quality, good logistics, work that is conducted safely and satisfied employees.

All the parties involved should have discussed the preconditions for the installation in good time and agreed on how it should be done.

It is important that both the client and the contractor are aware of the undertakings that each other have agreed to. These are best coordinated through good contacts.

Plan deliveries and installation in a timely manner. All the parties involved must keep each other notified as to any changed circumstances.

## 2 UNLOADING OF MATERIAL

The material is unloaded and suitably placed where the installation is to be carried out. This is to ensure that any unnecessary handling in the workplace can be avoided. Handle the material carefully, use wood pieces as support for material that is not placed on pallets.

When unloading, check that the unloaded goods match the delivery note. The goods must be checked to ensure that no damage is present. Non-conformance regarding package quantities or damages must be indicated on the delivery note and the sender must be contacted immediately.

## 3 PROPRIETARY INSPECTION

Assembly personnel are to perform and report, in the appropriate documents, proprietary inspections which must include the minimum of the following points:

### **Inspection points for installation in settings with traffic:**

- The material is checked for damage and quantity following delivery to the worksite
- The height is checked
- All bolt joints are fitted and tightened
- Any minor damage to the galvanizing or painting is treated

## 4 SAFETY

As installation is often performed in a busy setting, the safety aspect is crucial. Temporary barriers (if needed) must be adapted to ensure that installation can be performed without them being removed.

## 5 ESTABLISHMENT

Assembly personnel must be notified or be privy to the conditions prevailing in the workplace by the time of establishment at the latest.

## 6 INSTALLATION

The installation description assumes that the company responsible for the installation has ensured that the assembly personnel have the necessary expertise with regard to the terminal components, terms and bolt dimensions, etc., see drawings in Chap . 11.1. This information is available in the drawings. These are attached at the end of this description. Each bolt must be tightened with a normal torque. Care should be taken to ensure that any over-tightening is avoided.

### Setting out:

Before installation can commence, the location for the “nail” and post must be set out. This requires great accuracy. Setting out is done according to the drawing. NOTE: The dimension runs parallel with the roadway (inclined dimensions).

### Installation of “nail”:

The “nail” is installed by ramming. The “nail” is hammer down until the top is 1dm above ground level.

**Control point:** Check so the twist is less than 10 degrees. If more adjusting by moving the bolts (see picture below)



The “nail” is “hammered” to ground level.

“Nail length” in asphalt 1500 mm, and 2000 mm in gravel.

**Installation of posts:** The posts can be installed with different methods (depending on the post type and ground condition):

- Ramming the post
- Pre-drilled or pre-punched holes. The post must be fitted immediately after hole drilling/punching. Special equipment is needed for pre-punching holes in order to minimize damage in the asphalt and to optimize stability of the post.

*Note: If the ground where the pre-boring or pre-punched occurs is perceived as "loose", the site management must be notified.*

**Installation:** Install the pre-mounted terminal to the "nail" and the post.

Install the transition to the connection safety barrier.

The terminal is correctly aligned and fully tightened followed by an inspection as specified in Chap 3.

- *Unless different tolerances are specified,  $\pm 20$  mm applies for installation.*

## 7 REPAIRS TO ZINC DAMAGE

Repairs to any zinc damage in the delivered materials are carried out according to SS/EN-1461 and "Industry Standard - finishing and repairs".

Zinc damage must be treated as follows:

- Scratches and elongated spots narrower than 2 mm and less than 10 cm<sup>2</sup>. No action required.
- Damage wider than 2 mm and less than 3.16x3.16 cm (or less than 10 cm<sup>2</sup>) must be rectified by painting with zinc-rich paint. It is also possible to use a suitable zinc paste, zinc flakes or alloyed "sticks". Before any repairs are made, clean with a stainless steel brush.
- Damages larger than 10 cm<sup>2</sup> must be re-galvanized.

## 8 DEMOBILISATION

Inspection regarding heights and general visual impression.

A proprietary inspection in accordance with point 3 must be conducted and completed, and copies forwarded to the client (customer).

## **9 REPAIRS**

All damaged material must be replaced immediately. Damage means that the steel is weakened such as deep scratches, rips, creases and suchlike. Damaged material must be replaced with genuine parts.

Replacing damaged components following a collision is no different from a normal installation besides the disassembly operation. Bear in mind that there may be a lot of tension in the safety barrier that has been hit.

## **10 MAINTENANCE**

A minimum of maintenance includes rinsing with clean water where necessary followed by a visual inspection for damage.

## **11 OTHER INFORMATION**

11.1 Drawings: Page 9 - 13.

11.2 Declaration of Conformity: Page 14



# SAFEROAD®

## Main Office

SafeRoad Birsta AB  
Birstavägen 10  
Box 30  
863 22 Sundsbruk  
Sweden  
Tel: +46 60 52 72 00  
Fax: +46 60 52 72 16  
[www.birsta.eu](http://www.birsta.eu)

## Arboga Office

Kapellgatan 29  
Box 216  
732 24 Arboga  
Sweden

## Borås Office

Viaredsvägen 35  
504 94 Borås  
Sweden