

WORKING INSTRUCTIONS

INSTALLATION AND REPAIR TERMINAL

Birsta SafeEnd

Datum: 2013-02-27

Rev: 0

Introduction

Birsta SafeEnd is a Terminal that is tested according prEN 1317-7, performance class T110.

The typical installation process is subdivided in following order. This order is general. In case of a situation where special or project specific conditions prevail that do not allow this typical process to be followed, a project specific working description has to be established.

- 1) Planning:
- 2) Unloading of material:
- 3) Self-monitoring:
- 4) Safety:
- 5) Establishment:
- 6) Installation:
- 7) Repair of zinc damage:
- 8) On completion:
- 9) Repairs:
- 10) Maintenance:

1) Planning:

It's at this point that the project's quality and flexibility is determined. A well planned installation is an essential platform.

All parties involved should discuss their key aims for the installation, and agree on how it should be done.

It is important that both clients and contractors are aware of the commitments and obligations that they are responsible for. These are coordinated best by a good communication.

It is vital to plan delivery and installation in good time. All parties involved shall keep each other informed about changing conditions or circumstances so that these can be incorporated safely and properly into the installation.

2) Unloading of materials:

The material is unloaded and placed appropriately where the installation is done, so that there is no unnecessary handling of the material. Handle material with care, use timber battens or supports for components that are not delivered on pallets, with ample clearance for the safe use of forklifts and lifting straps to be safely secured when materials are moved.

When unloading, check that unloaded goods comply with the waybill. The goods must be checked to ensure that no damage is visible. Deviations on the package number or damages must be noted on the waybill and the sender shall immediately be contacted to agree the conditions and quantities.

3) Self-monitoring:

The system installers shall carry out and in appropriate document account the self-monitoring report which shall at least include the following paragraphs;

Checkpoints

The material is checked after the delivery to the workplace in terms of damage and quantity
The height of the railing is controlled within the specified tolerances.

All bolts are installed and tightened

Any slight damage to the hot-dip galvanizing or painting is treated

Possible zinc lumps and tags are removed

That no fixed obstacles are within the working width.

4) Safety:

Because the installation often is performed in a busy traffic adjacent to live carriageways, the safety terms are very important.

Temporary barriers should be adapted so that the installation can be done without their removal.

These important safety considerations must be involved at an early stage of planning, to maintain safety in the workplace during installation, and to ensure the safety of the road users.

5) Establishment:

Prior to commencement on site, the installers shall be informed about the conditions in the workplace, See Paragraph 3 and 4.

6) Installation:

The installation description implies that the company that provides the installations must ensure that the installers have the necessary knowledge of the terminal details, terms and bolts dimensions etc. This information is available on the system drawings. These are attached at the end of the description. Each screw shall be normally tightened. Caution should be taken so that over tension is avoided.

NOTE: Bolts are not to be over tensioned

Staking:

Before installation can begin, the setting out for the “nail” and post locations has to be done. This requires great precision. Faults at this stage are hard to correct at a later stage. Bear in mind that the cc distance measurement shall be parallel with the surface of the concrete.

Perforation: This requires custom broaches to minimize the damage of asphalt and optimize the steadiness.

Terminal is mounthed by piling the ”nail” down to about 1dm above groundlevel and then adjust the twist to less than 10 degrees.

If the ”nail” twisted more than 10 degrees, adjust by moving screws (picture 1)



Bild 1

Then pile down the ”nail” to groundlevel.

The premounted terminal is mounted to the ”nail” and to the post.

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

7) Repair of zinc damage:

Repair of any zinc damage according SS-EN-1461.

8) On completion:

Inspect and check horizontal alignment of the system, heights and that the general appearance is correct.

Self-monitoring according Paragraph 3 shall be performed and signed and copies shall be handed over to the client (customer).

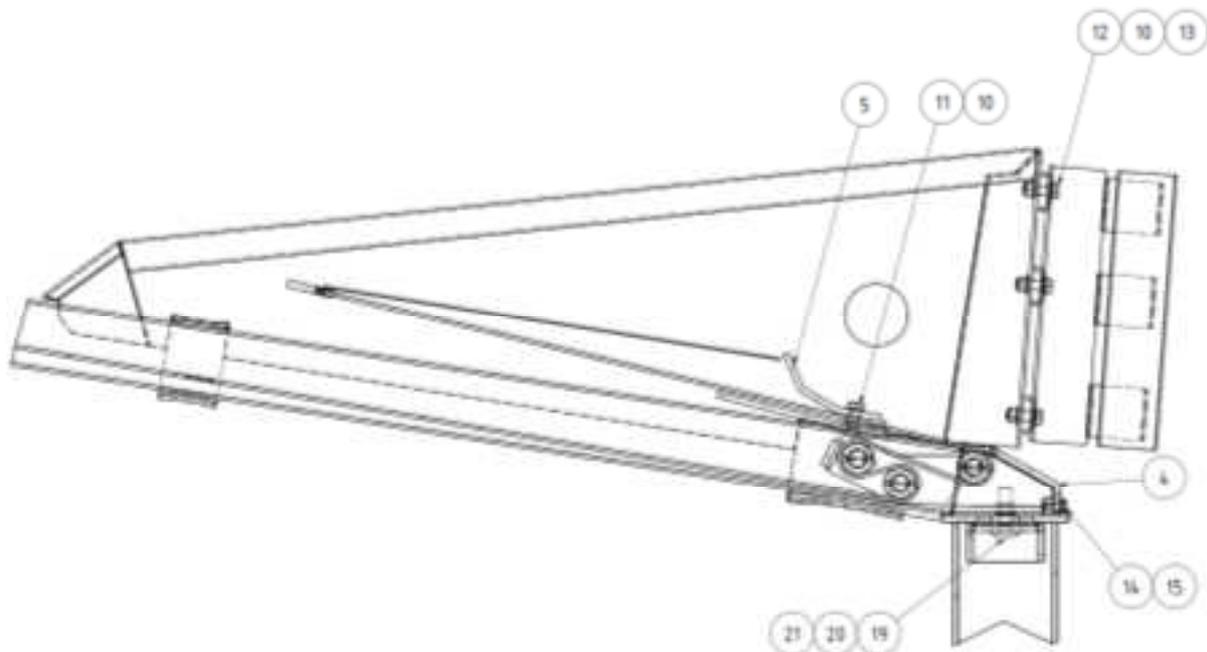
9) Repair:

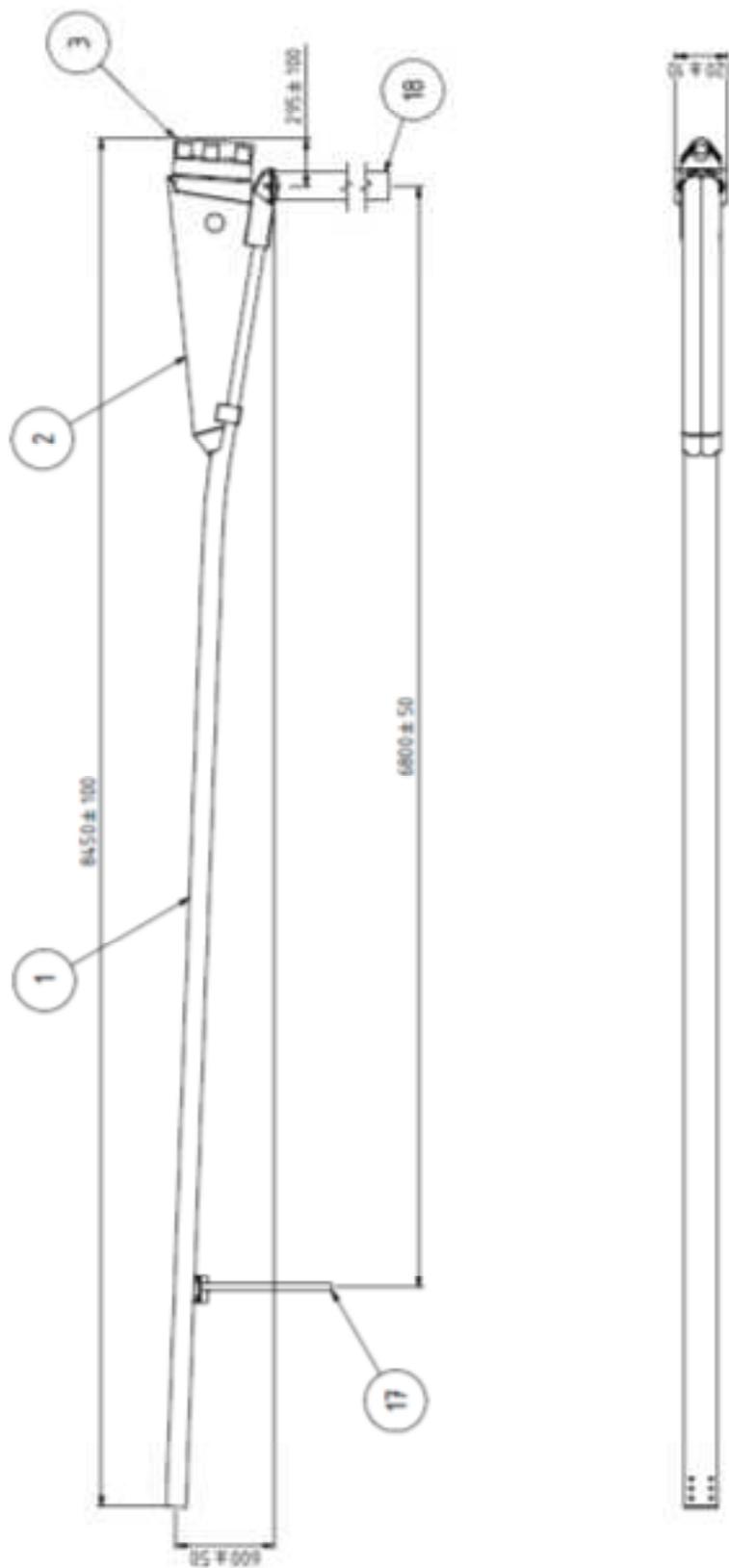
All damaged material must be replaced immediately. Damage requiring replacement is defined as that which has weakened the steel component e.g. deep scratches, tears, creases etc. To replace damaged parts after the collision is not different from the usual installation in addition to the dismantling.

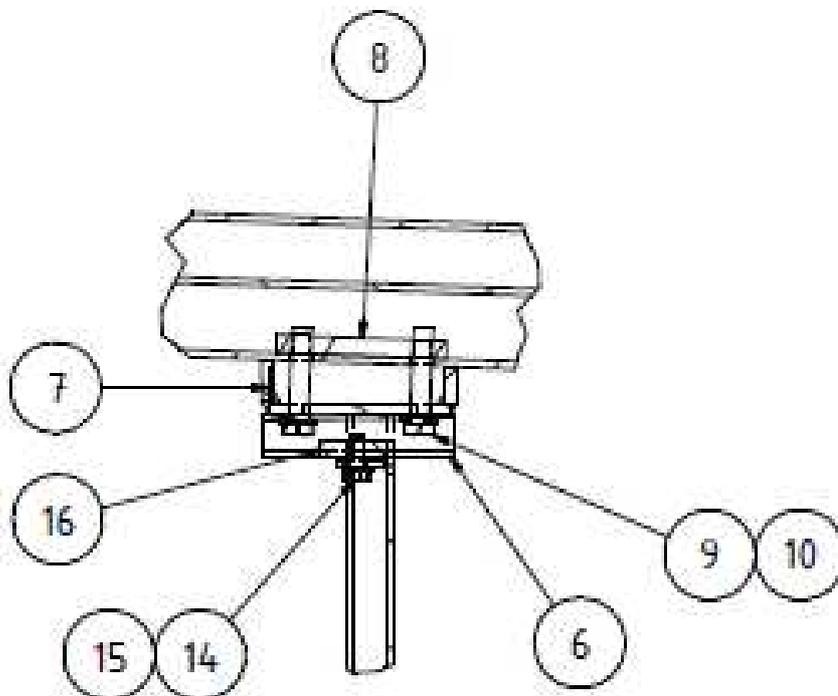
Keep in mind that there may be considerable tension in the damaged guardrail.

Terminal: REPLACE THE ENTIRE UNIT**10) Maintenance:**

The minimum maintenance of the terminal is an annual cleaning with clean water followed by a visual inspection for damage.







21	2	NUT	8.	M20	
20	2	WASHER	HV 200	21 x 36	
19	2	MUSHROOM HEAD SCREW	8.8	M20 x 80	
18	1	"NAIL"	S 355		8920531-CRT
17	1	C-POST	S 355		8920301-CRT
16	1	CONNECTOR PLATE M12	S 355	t=12	8920505-CRT
15	2	WASHER	HV 200	13 x 24	HDG
14	2	SCREW	8.8	M12 x 30	HDG
13	6	NUT	8.	M16	HDG
12	6	SCREW	8.8	M16 x 50	HDG
11	2	SCREW	8.8	M16 x 35	HDG
10	16	WASHER	HV 200	17 x 30	HDG
9	2	SCREW	8.8	M16 x 80	HDG
8	1	THREADED PLATE M16			8920092-CRT
7	1	DISTANCE, POST			8920090-CRT
6	1	C PROFILE 85x35x22,5x4			8920504-CRT
5	1	BRAKET, BRAKE BAND			8920015-CRT
4	1	SafeEnd BRAKE ASSEMBLY			89200501-CRT
3	1	DEFORMATION ELEMENT			8920061-CRT
2	1	SafeEnd BOX			8920062-CRT
1	1	SafeEnd TUBE			8920030-CRT