

APPLICATION NOTES ENVIROFILTER™ FOR CHARGED SINGLE USE CRUCIBLE

1. General



The Envirofilter™ must only be used in combination with the Thermit® welding process, with the charged single use crucible and an ignition stick or a Safe Start Cap or the Smartweld Spark.

The instructions for use are a supplement to the current Thermit® Code of Practice for all welding processes.

Only Goldschmidt-approved filter material should be used.

If filter cartridges become wet, they must be replaced with new ones, as the possible gas flow may be impaired.

Figure 1: Envirofilter™ with charged single use crucible

1.1 Signal words and symbols


SYMBOL	DESCRIPTION
WARNING	The signal word WARNING indicates a hazard with a medium degree of risk which, if not avoided, may result in serious injury.
CAUTION	The signal word CAUTION indicates a hazard with a low degree of risk which, if not avoided, may result in minor or moderate injury.
NOTE	The signal word NOTE indicates a hazard which, if not avoided, may result in damage to property or the environment.
	Situations with a risk of injury are additionally marked with a warning sign.

Table 1: Signal words and symbols

2. Filter design and use

This chapter illustrates the most important components of the Envirofilter™ and explains their functions.

2.1 Product description

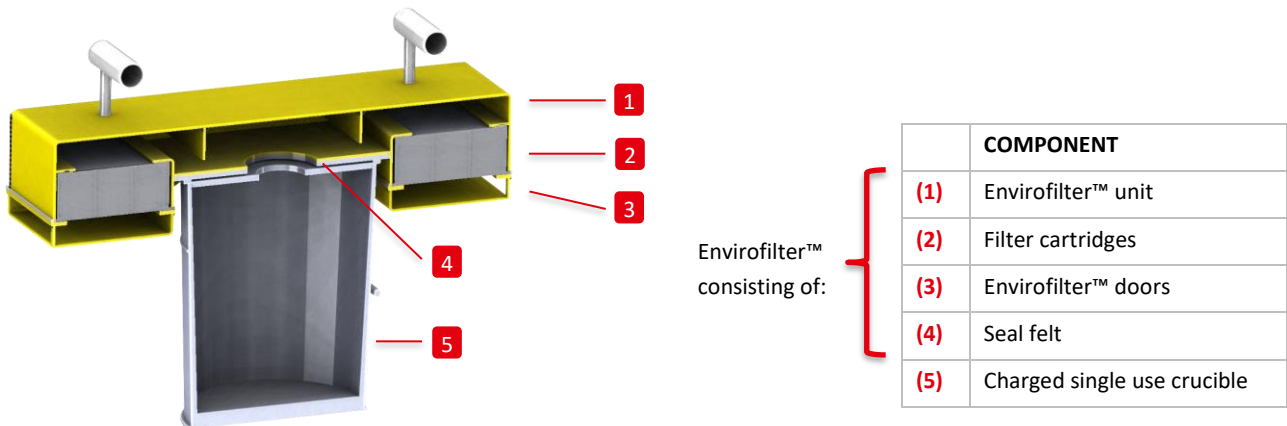


Figure 2: Overview illustration of the Envirofilter™ with charged single use crucible, seal felt and cartridges

2.2 Use

1. The Thermit® weld should be prepared in accordance with the current Thermit® Code of Practice.
2. An ignition stick or a Safe Start Cap or the Smartweld Spark is used to ignite the Thermit® portion.

NOTE

To ensure that the ignition stick does not prevent subsequent fitting of the Envirofilter™, advance checks must be made to see how far the end of the ignition stick protrudes from the cover of the single use crucible on ignition; the ignition sticks must then be shortened by this excess length either by bending or by cutting it off.

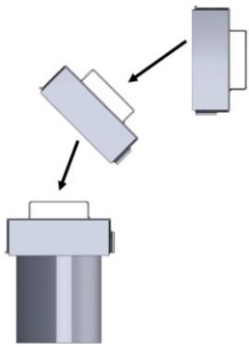
3. After the Thermit® portion has been ignited, the Envirofilter™ is quickly placed onto the single use crucible (5). Restraining brackets help align the single use crucible and the Envirofilter™ correctly so that the outlet of the single use crucible and the inlet of the Envirofilter™ are in line.



NOTE

Once the portion is ignited, quickly place the Envirofilter™ on top of the single use crucible. Ensure that the longer sides of the Envirofilter™ run parallel to the rails and not directly over the slag pans (see figure 3).

Figure 3: Placing the Envirofilter™ parallel to the rail



NOTE

The Envirofilter™ should be placed on the single use crucible in one quick motion, tilting it from vertical to its final horizontal position, as smoke and flames will develop as the Thermit® reaction begins (see figure 4). It should be placed gently as the weight will act on the mould and may result in an inadequate seal.

Figure 4: Placement of Envirofilter™

NOTE

Make sure that the condition of the seal felt is acceptable to ensure a good seal between the Envirofilter™ and the single use crucible. If the seal felt has deteriorated significantly to the point where the efficiency of the seal is compromised, replace the seal felt with a new piece.

4. Once the Thermit® reaction is complete and the steel has flown out, the Envirofilter™ should remain on the single use crucible for a further 60 seconds.
5. After 60 seconds has elapsed, the Envirofilter™ is removed.



NOTE

When removing the Envirofilter™ from the top of the single use crucible, place the Envirofilter™ on the floor with the inlet facing down (see figure 5).

Figure 5: After use, place the Envirofilter™ on the floor, with the inlet facing down



WARNING

Occasional mild flames around the Envirofilter™ are considered normal.



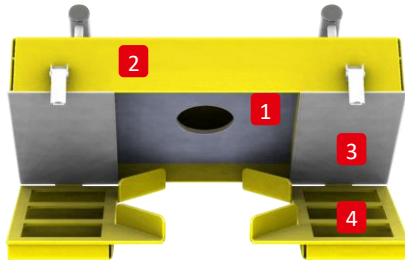
WARNING

Premature removal of the Envirofilter™ after the welding process could result in flames at the inlet of the Envirofilter™.

2.2.1 Replacing the filter material


The filter material consists of two filter cartridges (one in each compartment) and a seal felt. After 20 welds, both filter cartridges should be replaced. Seal felt should also be replaced if its condition deemed unable to provide a good seal between the Envirofilter™ and the single use crucible.

When required, the seal felt should be replaced as follows:




1. When the Envirofilter™ has cooled down, carefully remove the existing seal felt (1) which is located behind the four restraining brackets of the Envirofilter™ unit (2). To do this, unlock the two filter doors (4) and remove the seal felt.
2. Once the seal felt is removed, ensure the steel surface is smooth, clean and free of any slag which might lead to uneven surface.
3. Insert the new seal felt into the Envirofilter™ housing and close the filter doors (4).

Abbildung 6: Overview illustration of the Envirofilter™

	CAUTION
	Do not use excessive force in removing the seal felt as it might agitate the fine welding dust settled on the felt.

The Filter cartridges should be replaced as follows:

1. Release the latches securing the filter doors (4).
2. Carefully remove the existing filter cartridges (3) gently as the cartridges would have collected large quantities of dust particles at this point.
3. Clean the cartridge compartments, make sure there are no solid particles or weld dust from previous use. Use a vacuum cleaner if necessary.
2. With the gasket side facing down, place the new filter cartridges (3) into the filter compartment.
3. Close the filter doors and engage the latches. Make sure the wool felt on each cartridge is clamped between the Envirofilter™ unit (2) and the filter doors (4).

	CAUTION
	The filter cartridges should be replaced after every 20 welds. Visual inspection is required after each weld to determine if a replacement of the seal felt is required.

2.3 Disposal

Check all relevant local, regional and national laws and regulations. Local regulations may be more stringent than regional and national ones.

Filter cartridge / seal felt: European Waste Catalogue* (EWC) Code 17 06 04, which describes the waste as a mirror non-hazardous code.

*Also applies to the UK.

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