

## THANKS TO ORIGINAL FILTERS: WELDING FUME EXTRACTION UNITS REMAIN W3-COMPLIANT

*Posted on April 1, 2022 by Manfred Könning*



**W3 is quite simply the quality standard for extraction units. But this does not necessarily mean that metal companies permanently record legally compliant welding fumes, however. A prerequisite for retaining the important IFA certification is the use of original wear or spare parts – because they are also elementary components of the W3 examination: 9 facts on how to maintain W3 status.**

It is the national and international seal of quality for all extraction units within the scope of welding fume extraction: W3 certification by the [German Institute for Occupational Safety and Health \(Institut für Arbeitsschutz\)](#). Welders who process high-alloy steel, for example, must use a W3-approved extraction unit – analogous to DIN EN ISO 21904 Parts 1 + 2 and marked with the welding fume separation class W3. Only then are they allowed to return the cleaned air to the workspace in accordance with TRGS 528. Otherwise, they do not work in compliance with the law. For a unit to receive the relevant certification, it must fulfil certain criteria. In addition to other criteria, the test places particular emphasis on the capture and separation of welding fumes. It must be ensured, for example, that the device separates more than 99% of the welding fume particles from the extracted air.

*[\(Read everything worth knowing about the W3 test here.\)](#)*

W3 certification is, of course, linked to the technical condition of the unit and its function. In order to maintain it, certain criteria must be met. Essentially, companies should be guided by the following recommendations for action:

## **1. Ensure consistent quality**

Attention! It can happen that companies no longer act in conformity with the law, virtually unnoticed. In principle, the W3 certification for extraction units applies: IFA only awards the W3 certificate for an extraction unit with the exact condition it had on the test bench, including all relevant equipment details. If this changes, the W3 criteria are no longer fulfilled.

## **2. Use only original filter media from the manufacturer**

This is one of the most important recommendations for action, because storage filters in particular are wear parts that have to be changed regularly. But be careful: Counterfeit products or alternative filter media do not have the properties of the original filters. When using such filters, companies put an extraction unit into a state that is NOT true to the original, analogous to W3 approval – and lose it. Original filters, on the other hand, ensure that they are on the safe side – for example, even if surface filtration with special filter membranes is part of the W3 approval.

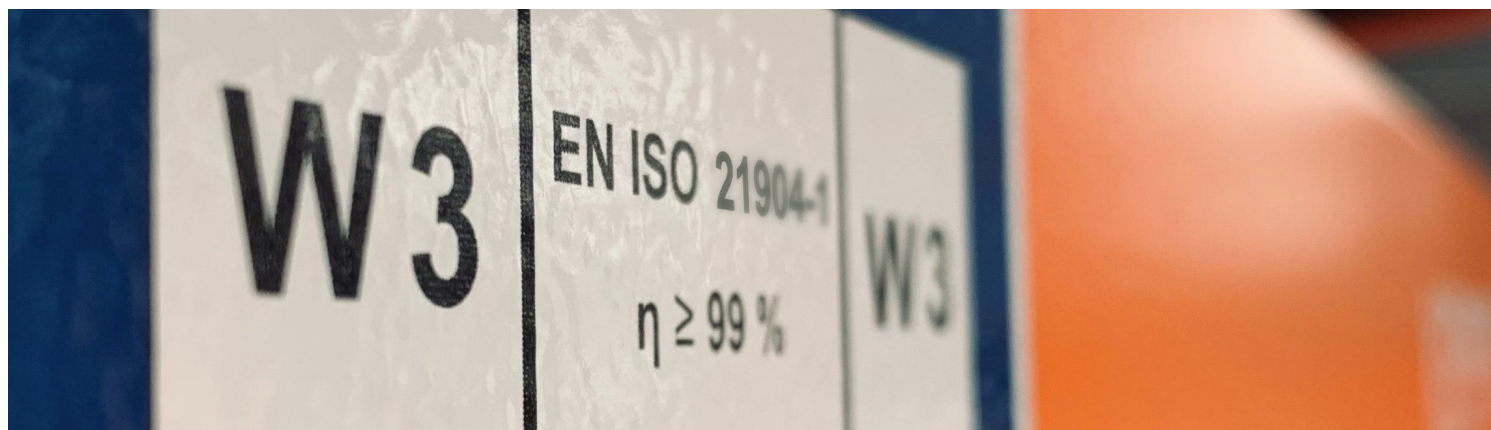
## **3. Extraction units with filters visible on the outside provide quick**

## information

Since the units were tested at the IFA in conjunction with a specific filter, they may only be operated with such an original filter. To be on the safe side once more, companies can use extraction units where the quality of the filter medium is already visible from the outside. Today, there are various products on the market where the filter is part of the unit housing. Examples can be found [here](#) or [here](#).

### 4. Achieve maximum benefits with original filters in W3-approved units

Only W3-approved extraction units with original filters guarantee an optimum cost/benefit ratio. This is the only way for extraction units to work efficiently – because part of the test according to DIN EN ISO 21904 is also the test of a minimum service life of the filter before the volume flow monitoring issues an alarm. This ensures permanent compliance with the welding fume separation class and extraction capacity. And, in addition, the extraction unit is energy efficient in combination with the original filter.



### 5. Maintain your units also with other original spare parts

A filter is the heart of every extraction unit, but other components are also relevant within the W3 certification – e.g. the motor or the impeller that is decisive for the optimal extraction capacity of an extraction unit. This is because it enables good capture of the welding fumes and is monitored. If the extraction capacity falls below this level, an alarm sounds. The required extraction capacity depends on the capturing device, e.g. the extraction hood on an extraction arm. ([Read here how an extraction hood, for example, should be designed.](#)) To ensure that it can be easily adjusted and maintains its position, it is also subject to testing according to DIN EN ISO 21904. When it comes to maintenance and possible replacement, it is also important to use original spare parts. This is the only way to maintain the W3-approved quality of an extraction unit.

## 6. Efficient technology with IFA-approved components

Only those who use original filters or spare parts that were part of the W3 approval can be sure of the optimum functioning of an extraction unit. Extraction units and filter media are matched to each other in such a way that only these original components maintain the efficiency of the unit. The use of original spare or wear parts ensures that the unit technology remains optimally procured. This is how companies maintain W3 certification, but also efficiency.

## 7. Carry out air safety monitoring

Air safety monitoring is essential. And for the following reason: Metal companies must provide proof of effectiveness – i.e. about whether limit values can still be complied with. Once a year, an air safety inspection is therefore mandatory in Germany – either by qualified personnel or [by the manufacturer](#), but it is also generally recommended. Without it, the W3 approval expires. The following are checked, among others:

- Functional and visual inspections of components such as housing
- Fan or filter
- Check for leaks
- Replacement of defective or used parts such as V-belts or filters
- Documentation and issuing of an inspection sticker

## 8. The electrical safety check should also be mandatory

The electrical safety check is also recommended in order to maintain the optimum condition of a W3-approved extraction unit. It is mandatory in Germany once a year. Mobile, plug-operated units such as mobile welding fume extraction units are subjected to an electrical check – from the following points of view:

- Testing of the required dielectric strength and leakage current measurements
- Insulation resistance measurements
- Documentation and issuing of the inspection sticker

## 9. Very practical: Preserve your warranty claims

Anyone who remains W3-compliant thanks to the use of original parts also has a very practical benefit. When operating an extraction unit, warranty claims against the manufacturer can only be made if the components are tested in accordance with the W3 approval.

