

MAKE YOUR EVERYDAY WELDING SAFER.

Your local Lorch partner:



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LORCH
smart welding

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WELDING FUMES? NOT A CHANCE!

Your employees are your most valuable asset.
Protect them.

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Protect your welders.

Welding will always produce smoke, gases, and vapours. Quite frequently you will hear welders complain about headaches or nausea. Some consequences will not be immediately evident, such as illnesses of the respiratory system and lungs, damage to the nervous system, or even cancer.

How harmful the released welding fumes exactly will depend on the welding procedure, basic material, and filler materials, as well as the shielding gas used.

Your employees are your most valuable asset. They deserve the best protection for their health.

STOP – the principle for health protection.

We at Lorch have made it our motto to consistently implement the STOP principle with a ranking of protective measures. Therefore, we offer products and solutions to minimise health hazards from welding fumes.

The most important work safety measures in welding are:

1. Procedures that minimise welding fumes
2. Extraction – at the torch or with dedicated systems
3. Sufficient ventilation
4. Protective equipment

S ubstitution

Low-emission welding procedures

Modern welding processes ensure special stabilisation and control of the arc. This not only avoids spatter but also reduces welding fume emissions.

The Institut für Schweißtechnik und Fügetechnik at the RWTH Aachen (FEF Forschungs- und Entwicklungsgesellschaft Fügetechnik GmbH) performed welding fume examinations with modern Lorch welding processes in fillet welds similar to the actual application.

To minimise the welding fume emissions, these examinations recommend:

- Using unpulsed processes with very short arc lengths in the spray arc for the upper performance range (in particular Lorch Synergic and SpeedArc processes)
- Using pulsed processes in the medium performance range (in particular the Lorch Pulse, SpeedPulse, and SpeedPulse-XT processes)
- Using stable, low-spatter short arc processes in the lower performance range (in particular the Lorch Synergic and SpeedArc processes)

Low-emission shielding gases

Examinations have shown that argon-based mixed gases with a lower CO₂ share can help in lowering welding fume emissions.

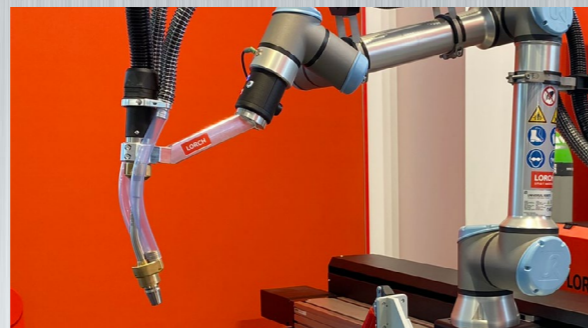
The outstanding properties of the Lorch welding processes help users in lowering welding fume emissions with standard gases.

Optimal combinations are special Lorch synergic lines for welding for the shielding gases ARCAL 14, ARCAL 24 and TERAL 24-7 by Air Liquide. They also stand out with reduced spatter and silicates on the weld seam.

T echnical protective measures

Extraction torch – manual

The welding fumes are extracted right where they are produced. This protects the welder and everyone nearby.



Automation

Automated welding, such as the collaborative Cobot welding, also helps in reducing welding fume exposure thanks to its glare protection and extraction.



O rganisational protective measures

Maintenance schedules and safety inspections

Health protection must not be left to chance. Work safety is a mandatory, permanent task of companies.

Regular training of the employees regarding options for protection against welding fumes are important as well.

Ensuring hall ventilation

This is particularly useful when extraction is no longer sufficient in the area where work and welding is performed. Hall ventilation keeps the air in the workshop clean – which will benefit all employees, including those not directly working on welding tasks. Hall ventilation is to be turned on in time before starting work and should continue to run for a while after the working day is over. It should also run in addition to the local extraction.

Regular ventilation of rooms

Fine welding fume particles will remain in the surrounding air in the absence of extraction or ventilation. While invisible, they will impair your employees' health in the long run. Therefore, ensure regular ventilation where extraction or ventilation systems are not installed or cannot be placed.

Further measures

- Obtain advice from your local employer's liability insurance association
- Regularly perform wet cleaning of the hall to remove dust

P ersonal protective measures

Auto darkening filters with fresh air

The matching helmet is important as well to protect the welder from welding fumes.

We have developed the APR 900 air with fresh-air unit for this. It is equipped with a particle filter for use in good working conditions. The helmet is also available with a gas filter if ventilation is restricted, or if the material requires it. It offers greatest protection at highest wearing comfort.



Also see the DGUV guide.