



Fume, Ventilation, and Respiratory Protection Guide

Category: Fume Control

Audience: Safety, maintenance, supervisors, integrators

Badge: Health Controls

Planning guide for weld fumes, source capture, general ventilation, respiratory programs, and robotic-cell fume controls.

Important limitation: This document is a general planning aid only. It does not replace OSHA requirements, employer safety programs, equipment manuals, SDS review, qualified risk assessment, training, lockout/tagout procedures, PPE selection, or competent safety review.

Exposure Controls

- Use engineering controls such as source capture, extraction, ventilation, and enclosure design where practical.
- Review base metal, wire, coatings, cleaners, cutting fluids, and SDS before welding.

Respiratory Protection

- If respirators are required by the employer program, use a complete respiratory protection program including evaluation, fit testing, training, and maintenance as applicable.

Field Checklist

Item	Verified	Notes
Fume extraction operating		
Coatings/SDS reviewed		
Airflow not blocked		
Filters maintained		
Respirator program reviewed if needed		
Operator exposure reviewed		

Reference Basis

- OSHA 29 CFR 1910 Subpart Q - Welding, Cutting and Brazing.
- OSHA 29 CFR 1910.147 - Control of Hazardous Energy (Lockout/Tagout).
- NIOSH welding fume and manganese exposure resources.
- RAS equipment planning information for robotic arc welding systems using 480V / 60Hz / 3-phase power, RAS-500PR power supply, water-cooled torch packages, torch cleaning, and wire cutting stations.

Revision: RAS Safety Knowledge Base expanded safety resource set. Verify against current site-specific rules before use.