MassCAR Auto Body Training

Massachusetts Office of Technical Assistance & Technology

What is MassCAR?

- *Was* **C**ollision **R**epair **A**uto **S**hop **H**elp (CRASH) Course
- *Now* **Mass**achusetts **C**lean **A**uto **R**epair (MassCAR)
- *Was* only Auto Body
- *Now* both Auto Body & Auto Repair

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MassCAR Goals

- Understand and achieve compliance with environmental, health and safety requirements.
- Learn about and implement pollution prevention and other best management practices.
- Shops that provide feedback or participate in trainings will receive a MassCAR certificate to acknowledge their efforts and contributions to this program and the environment.

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The Massachusetts Clean Auto Repair Partnership (MassCAR)

Recognizes

[Company Name]

for its commitment to developing sustainable operations.
We appreciate your assistance with the
MassCAR guidance.

Massachusetts Office of Technical Assistance and Technology,
Executive Office of Energy and Environmental Affairs
Commonwealth of Massachusetts

_____

What is in the MassCAR Guide

MassCAR checklist

- Actions you can take to ensure that you stay in compliance and protect your workers and the environment

MassCAR fact sheets

- Information about key auto body and repair topics identified by the project partners.

MassCAR Environmental Achievement Statement

- A downloadable self-certification document that you can use to advertise and celebrate your environmental practices.

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MassCAR Checklist Tips

- Basic federal, state, and local requirements are marked with a ✓ and are in **bold**.
- You city / town may have additional local requirements not listed on this checklist.
- Print & date the checklist.
- Keep old checklists to demonstrate ongoing compliance efforts.
- Show checklists to inspectors to document your efforts to stay in compliance.

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MassCAR Checklist Content

- ☑ Permits
- ☑ Industrial Wastewater (IWW) Discharge
- ☑ Hazardous Waste Identification
- ☑ Hazardous Waste Storage/Accumulation
- ☑ Hazardous Waste Container Management
- ☑ Hazardous Waste Documentation and Transport
- ☑ Aboveground and Underground Storage Tanks
- ☑ OSHA Requirements and Best Practices
- ☑ Spray Booth
- ☑ Storage of Flammable Chemicals
- ☑ Mixing Room
- ☑ Refrigerant and Antifreeze Recovery
- ☑ Fire Prevention and Emergency Planning

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How to be Ready for an Inspection

Have book / binder ready with the following:

- All permits / licenses
- Tax ID number
- Hazardous waste storage / transportation records
- Written plans for emergencies / fires / spill control
- Employee licenses / training records / certifications
- Documents from previous inspections
- Spray booth records on filter changes / organic materials
- SDS (safety data sheets) for all chemicals

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Permits and Things You Need

State

- Register your shop with the Division of Standards every 3 years
- Surety Bond
- Worker's Compensation Insurance
- Appraiser's License
- Hazardous Waste Registration
- Under / Above Ground Storage Tank Registration

Local

- Business Registration
- Occupancy and / or Use of Premises Permit
- Indoor Vehicle Storage Permit
- Flammable Storage Permit
- Cutting Torch Permit and / or Oxygen, Acetylene Storage Permit
- Towing License
- Other

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MassDEP (State) Air Permits

Spray Booth - Main Source of Air Emission

- Air permit - based on the Volatile Organic Compounds (VOCs) emitted.

- Construction, substantial reconstruction, or alteration that results in an increase in potential emissions of one ton or more of any air contaminant, calculated over any 12 consecutive month time period – air permit required (310 CMR 7.02)

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MassDEP (State) Air Permits (cont.)

- Exemptions:

  a) coating and solvent use is below **670 gallons** per month of VOC containing materials, or has an emission rate of **2.5 tons** of VOC/month (Source Registration is required)

OR

b) organic material use (VOC and non-VOC) is less than **2,000 gallons** per 12-month rolling period, or emission rate is less than **10 tons** (no Source Registration)

AND

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MassDEP (State) Air Permits (cont.)

Coating operation meet specific requirements:

- **Record keeping**;
- Properly designed spray booth and stack
- Properly operated and maintained spray and spray associated equipment (HVLP, electrostatic, spray gun cleaning – minimize solvent evaporation)

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Spray Booth and Stack Design

- Air at filter less than 200 feet/min
- (OSHA requires greater than 100 feet/min)
- Stack
  - Vertical discharge
  - No rain caps or similar
  - At least 40 feet/sec exit velocity
  - At least 35 feet above ground or 10 feet above roof level

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Spray & Spray Related Equipment

- Electrostatic, HVLP spray guns or any other coating application methods that achieves transfer efficiency equivalent to electrostatic or HVLP and approved by the DEP in writing
  - HVLP = operated between 0.1-10 psi

- Gun cleaning that minimizes evaporation
  - Automatic gun washer
  - Non-atomizing washing method

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Spray & Spray Related Equipment (cont.)

- Spray booth filters
  - 2 or more layers
  - Dry fiber mat
  - Total thickness of at least 2 inches
  - At least 97% efficient

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KEEPING MASSACHUSETTS GREEN AND LEAN

Guidelines for Compliant Spray Booth Operation

In December 2007, the Massachusetts Department of Environmental Protection (MassDEP) introduced new regulations that will affect many spray booth and coating operations emitting relatively small amounts of solvents and pollutants known as Volatile Organic Compounds (VOC). In January 2008, the U.S. Environmental Protection Agency (EPA) finalized new regulations for auto body shops and certain other businesses with spray coating or paint stripping operations. By complying with the state and federal guidelines, you can prevent pollution and protect your shop from financial penalties and legal liabilities, as well as ensure worker safety. The Office of Technical Assistance and Technology (OTA) prepared this document to help you to: understand the new regulations; avoid common regulatory compliance violations; reduce VOC emissions; and save money. OTA can help you to comply with the new regulations and find new ways to reduce the use of toxic material.

Why Massachusetts Regulates Coating Operations

During coating operations, solids are deposited on an object to provide corrosion protection, increased durability, adhesion, or to increase aesthetic appeal, but coatings may contain liquid Volatile Organic Compounds (VOC) that can be carried to the air. VOC, when contained in materials used in coating operations and in surface-prep and clean-up solutions, contribute to the formation of ground-level ozone. Workers can suffer long-term health impacts from inhaling solvent vapors. For the shop owner, this can result in productivity losses, worker compensation claims, and other problems. Air emissions can also generate complaints from neighbors.

Use of LaserTouch™ Spray Gun at Bay Path Regional Vocational Technical School

The New Massachusetts Regulations and What They Mean for You

In 2007, the MassDEP announced new regulations on VOC for companies with spray coating operations: including plastics parts coaters, wood finishers, metal parts and products coaters, automotive surface coaters and refinishers, and leather surface finishers. The regulations are based on the amount of VOC emitted by a shop. To determine if the regulations apply to your facility, the key questions are:

EPA (Federal) Air Regulations

National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources (40 CFR Part 63 Subpart HHHHHH)

Miscellaneous Surface Coating Operations at Area Sources Rule applies to "autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations".

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EPA (Federal) Air Regulations (cont.)

However, if you can demonstrate that you spray apply **no** coatings that contain the target HAPs:

- Chromium (Cr)
- Lead (Pb)
- Manganese (Mn),
- Nickel (Ni), or
- Cadmium (Cd),

you may petition the EPA for an exemption from this subpart (most suppliers can give you a list of paints that contain these HAPs)

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EPA United States Environmental Protection Agency

Collision Repair Campaign

- Collision Repair Campaign Home
- Basic Information
- Announcements
- Regional Campaign Projects
- Tools & Resources
- Training
- Frequent Questions
- Materiales del Outreach en español

EPA developed the Collision Repair Campaign to focus on meaningful risk reduction in the Collision Repair source sector to complement our ongoing community air toxics work and attain reductions at a faster rate. The Campaign will also serve as an opportunity for shops to work towards early compliance with the Auto Body Rule.

Basic Information – Goals, health impacts, and benefits of the Campaign.

Announcements – The latest news about the collision repair campaign

Regional Campaign Projects – Descriptions of projects happening around the country.

Tools and Resources – Resources providing information about various areas of the Auto Body industry, including best management practices, technical assistance, and some videos about the industry.

Training – Current and past training available.

Auto Body Rule

- Final rule (PDF) (15pp, 92k)
- Brochure summarizing rule (PDF) (2pp, 70k)
- Example Initial Notification (PDF) (4pp, 33k)
- Example Petition for Exemption (PDF) (5pp, 65k)
- Example Notification of Compliance Status (PDF) (5pp, 41k)
- Example Painter Training Certification (PDF) (3pp, 53k)
- State Delegations

Now Available

- Materiales del Outreach en espaol
- Training DVD and Poster
- Training Video

NESHAP - What Am I Required To Do?

- **Implement equipment and management practices:**

✓ **All painters must be trained and certified**

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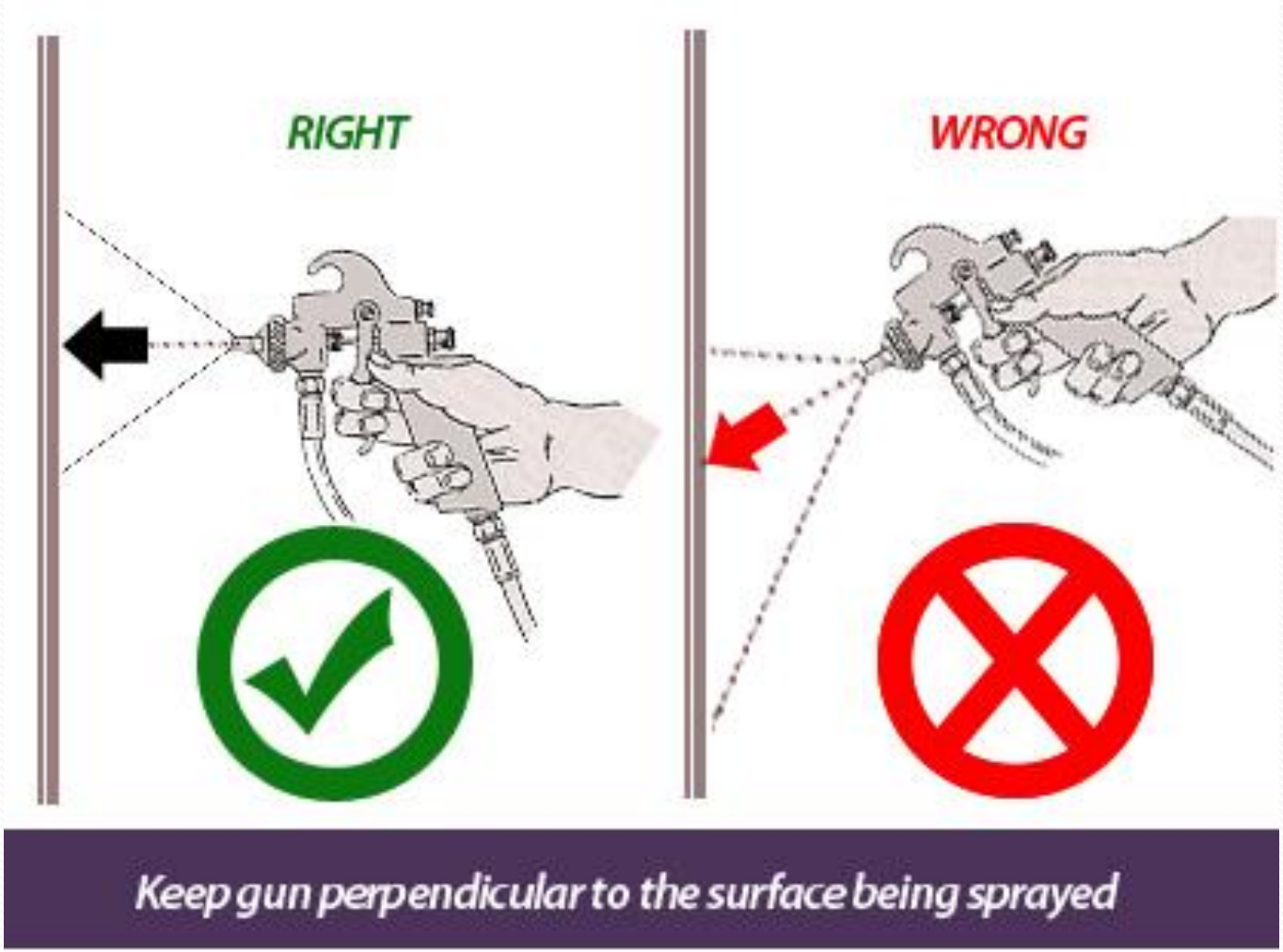
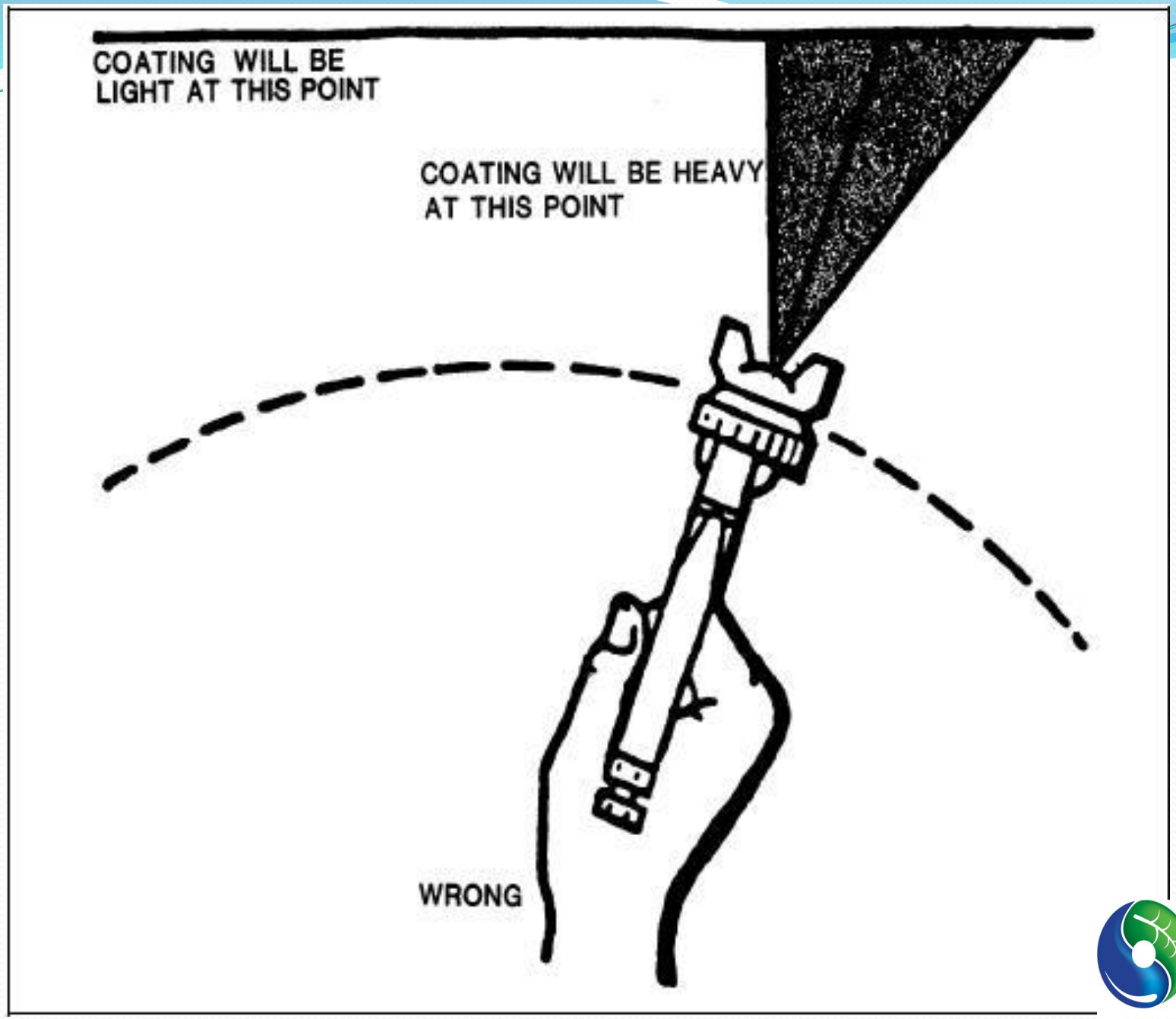
Proper Spray Technique Examples





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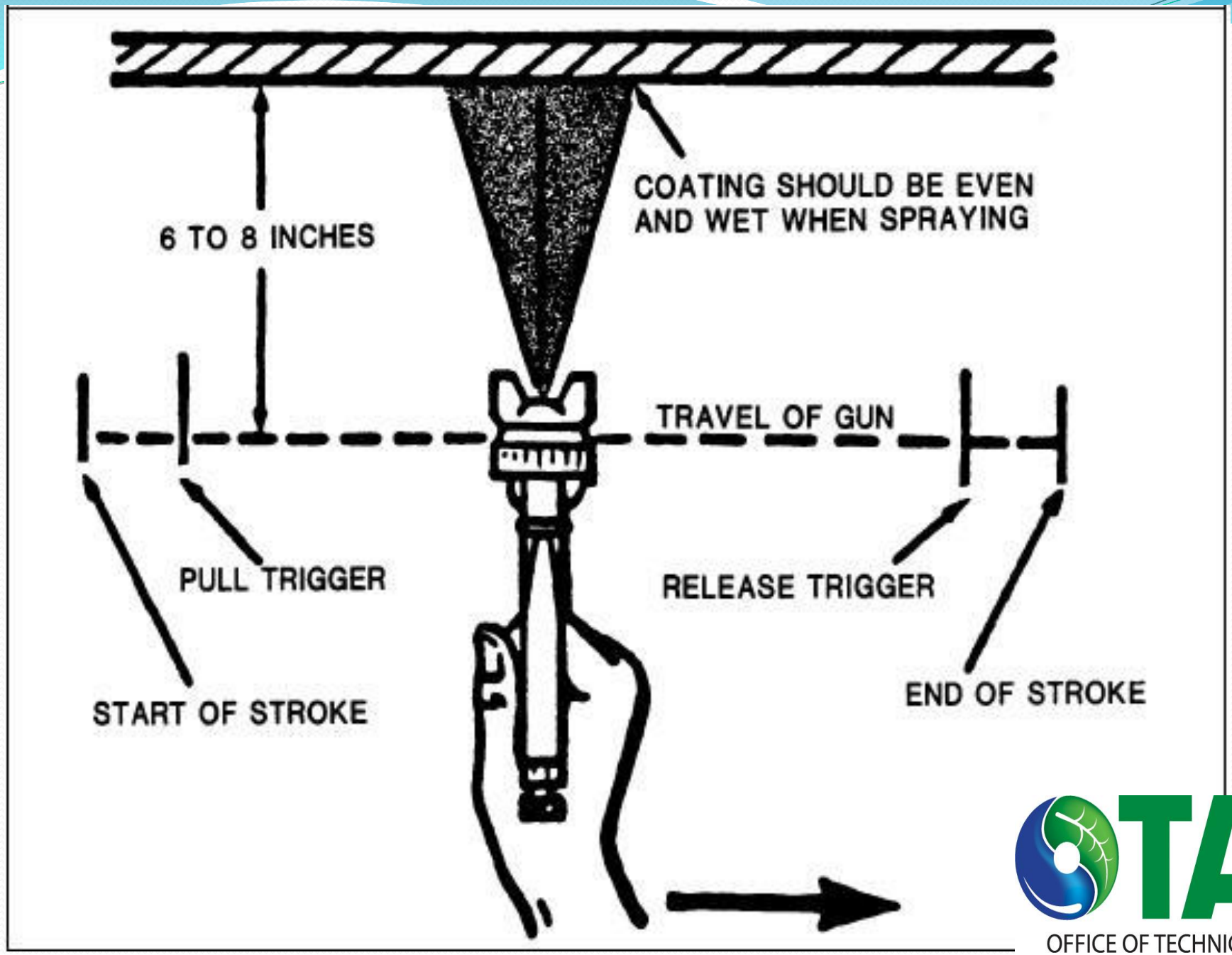

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NESHAP - What Am I Required To Do?

- **Implement equipment and management practices (cont.):**
  - ✓ **Proper spray booth design – fully enclosed**
  - ✓ **Use 98% efficiency filters**
  - ✓ **Use HVLP, airless, air-assisted airless spray guns, electrostatic application, or equivalent technology**
  - ✓ **Proper gun cleaning – no atomized mist created outside a container collecting used gun cleaning solvent**

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NESHAP - Reporting

- **Initial Notification to EPA:**
  - new sources – 180 days after startup
  - existing sources – ASAP
- **Notification of Compliance:**
  - new sources – as part of the initial notification
  - existing sources – as soon as compliance reached
- **Annual notification of changes report – required each calendar year any reportable changes occur**

NESHAP - Recordkeeping

- **Copies of Notifications submitted to EPA**
- **Painter Certifications**
- **Filter efficiency documentation**
- **SDS**
- **Spray gun transfer efficiency**
- **Deviation and corrective action documentation**

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Common Hazardous Wastes

- Paint strippers / thinners
  - ☠ Methylene Chloride
- Clear Coats
  - ☠ Diisocyanates
- Lead Acid Batteries
- Rags / Sorbent Pads
- Sanding Dust
- Waste Oil
- Solvent Primers / Base Coats
- Water-Based Paints
- Spray Booth Filters
- Still Bottoms from Solvent Recyclers
- Un-deployed Air Bags

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Hazardous Waste Generator's Status

Status	Per Month	On Site	Store
LQG (Large Quantity Generator)	≥ 1000kg	no limit	90 days
	> 270 gal		
	> 5 drums		
SQG (Small Quantity Generator)	100-999 kg	6000 kg	180 days
	27-270 gal	1500-1620gal	
	5 drums	27 drums	
VSQG (Very Small Quantity Generator)	< 100 kg	1000 kg	No Limit
	< 2 7 gal	270 gal	
	½ drum	5 drums	

Most Common Hazardous Waste Violations - *paperwork*

- **Facility not registered**
- **Facility "acting out of status"**
- **Improper generator ID**
- **Manifest records missing (keep 3 years)**
- **No recycling permit**

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Most Common Hazardous Waste Violations – *shop floor*

- **Hazardous Waste Accumulation Area**
- **Container Management**
- **Labeling**

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Hazardous Waste Accumulation Area

- **Accumulation area posted**
  - **"Hazardous Waste" - at least 1"**
- **Accumulation area marked**
  - **Painted line, clearly visible demarcation**
- **Impervious surface**
- **Sufficient aisle spacing**
  - **Sufficient to conduct inspections**
- **Is accumulation area secure?**
  - **Is it accessible by appropriate staff only?**

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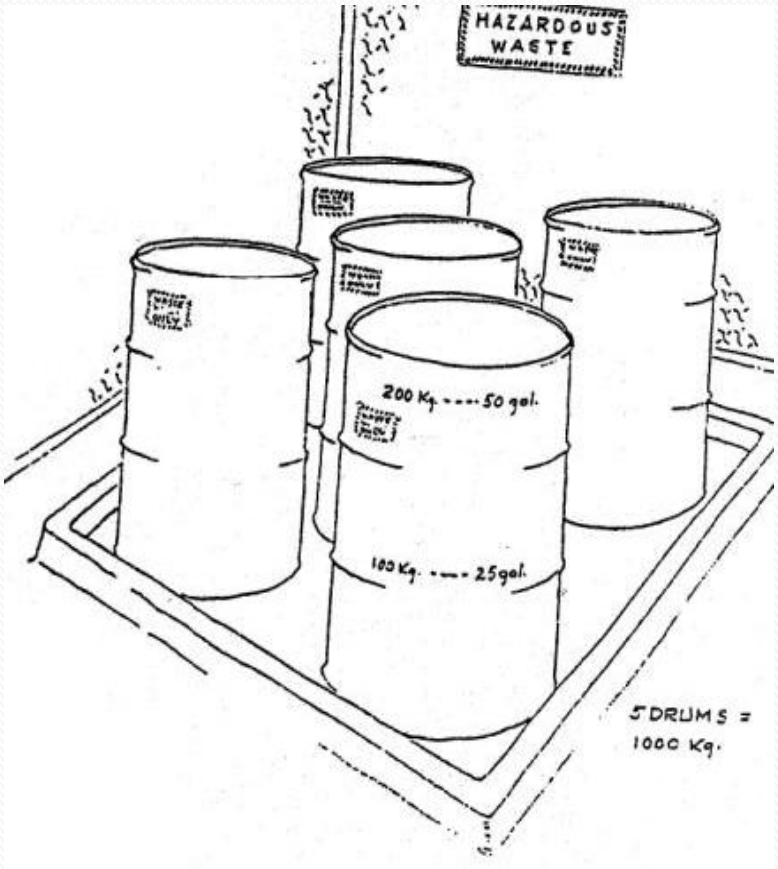
Hazardous Waste Accumulation Area

An **outdoor** area must have secondary containment, such as a berm or dike, which will hold any spill or leaks at:

- **10% of the total volume of the containers, or**

- **110% of the volume of the largest container, whichever is larger.**



Container Management

- **Are Drums/Tanks Labeled?**
- **Are all Drums Closed?**
- **In good condition?**

- **Wastes of different types must be segregated.**
- **Inspect containers at least once a week (for leaking or deterioration).**
- **Hazardous wastes must by separated from recyclable materials**

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Labeling Containers and Tanks

- **"HAZARDOUS WASTE"**
- **Name – e.g., "Waste Oil", "Solvent"**
- **Hazard Associated with Waste – e.g., "Ignitable", "Corrosive", "Reactive", "Toxic"**
- **Date Accumulation Started – for SQG and LQG**

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Satellite Container

- **At or near point of generation (not next room)**
- **One per waste stream (55 gallon max. or one quart of acutely hazardous waste)**
- **Are must be managed by person who is directly responsible for process producing the waste**
- **Date the label when the container is full**
- **3 days to move container to accumulation area**

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Spray Booth – Used Fiber Mat Filters

- Could be classified as hazardous if ignitable or toxic
- 310 CMR 30.125, Table 1 – Toxicity Characteristic
- Nitrocellulose – ignitable (the Department of Transportation Burn Rate test)
- If not toxic or ignitable – dispose of as a solid waste

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OSHA Requirements

Engineering Controls and Workplace Requirements

- **S**afety **D**ata **S**heets (SDS)
  - Stored in a **known** single location accessible to all employees
- Emergency Plans
  - More than 10 employees – Required written plan
  - Less than 10 employees – Not written, but employees must know what to do in case of emergency
- Flammable Storage Cabinets
- Ventilation in Paint Mixing Rooms
- Explosion-proof lighting in spray booths

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OSHA Requirements

Employers Responsibility for Personal Protective Equipment (PPE) under 29 CFR 1910.132

Employers are responsible for

- Assessing workplace hazards
- Identifying, providing, and training employees on the use and maintenance of PPE
- Enforce that proper PPE is used

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OSHA Respiratory Protection Requirements

Tasks:
Painting / Sanding / Welding / Other
Owner Must:
•Develop Respiratory Protection Program •Select Appropriate Respirators •Know How to Properly Store & Care for Respirators •Train Employees •Enforce Program
Workers Must:
•Be Medically Approved •Be Annually Fit Tested •Participate in Trainings •Know How to Properly Store & Care for Respirators

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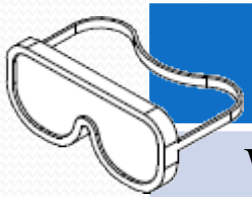
Other OSHA PPE requirements



Eyes
Welding
Sanding
Painting
Handling Chemicals
Other

Hands
Welding
Sanding
Painting
Gun Washing
Handling Chemicals
Other

Ears
Sanding
Power Tools
Compressed Tools
Engine Noise
Other

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Auto Body Toxics

- **V**olatile **O**rganic **C**ompounds (VOCs)
- **H**azardous **A**ir **P**ollutants (HAPs)
  - Cadmium, Chromium, Lead, Nickel, and Manganese
- Gun Wash
  - Toluene, Acetone, Methyl Ethyl Keytone
- Isocyanates and Diisocyanates in Clear Coat
  - Penetrates latex gloves
  - Can cause irreversible lung damage
  - Targets eyes & mucous membranes
- Wheel Wash
  - Hydrofluoric Acid
  - Penetrates skin to target bones
  - Fatalities
- Pre-Wash
  - Benzene, Toluene, and Xylene

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Choosing Less Toxic Alternatives

- **V**olatile **O**rganic **C**ompounds (VOCs)
  - ☑ Ask your vendor / Look at SDS
- **H**azardous **A**ir **P**ollutants (HAPs)
  - ☑ Paint manufactures websites
- Gun Wash
  - ☑ Water-Based
- Isocyanates and Diisocyanates in Clear Coat
  - ☑ PPE & Ventilation – No alternative, so protect workers
- Wheel Wash
  - ☑ Choose Non-HF Wheel Wash
- Pre-Wash
  - ☑ Alcohol-based or glass cleaner

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Safer Gun Wash – 912 Auto Center

Acrastrip® by US PolyChem
Recirculates solution through 2 filters
Lifts paint off rather than dissolving
Can be used for years – reducing disposal costs
No need to pre-clean
Cleans solvent and water-based paints

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Savings from Water-Based Gun Wash

Product	Use	Cost	Costs	Annual Savings
Naked Gun Cleaner®	60 gal/year	$120/5 gal drum	[illegible]	
Lacquer Thinner	120 gal/year	$52/5 gal drum	[illegible]	
Hazardous Waste Disposal		$350/6 months	[illegible]	
Acrastrip®	5 gal/6 years	$189/5 gal drum	$31.50/year	$3,356.50

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Water-Based Paints – Allston Collision Center

Water-based benefits
Prepared using water rather than solvent
Eliminated over 1,200 pounds of Volatile Organic Compounds (VOC) / year
Computer system measures paint for mixing
Less overspray
Detachable paint cups

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Paint Mixing Room Ventilation

Bad

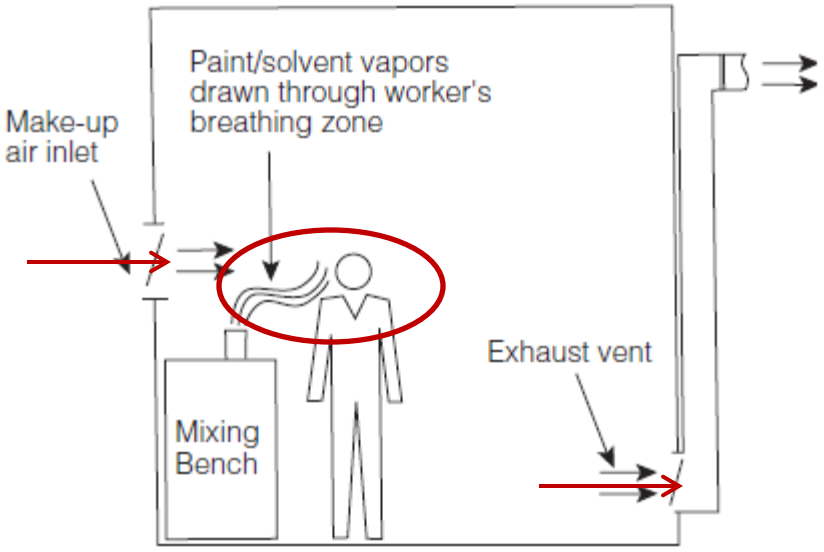

Figure 1. Poor Ventilation Design

Good

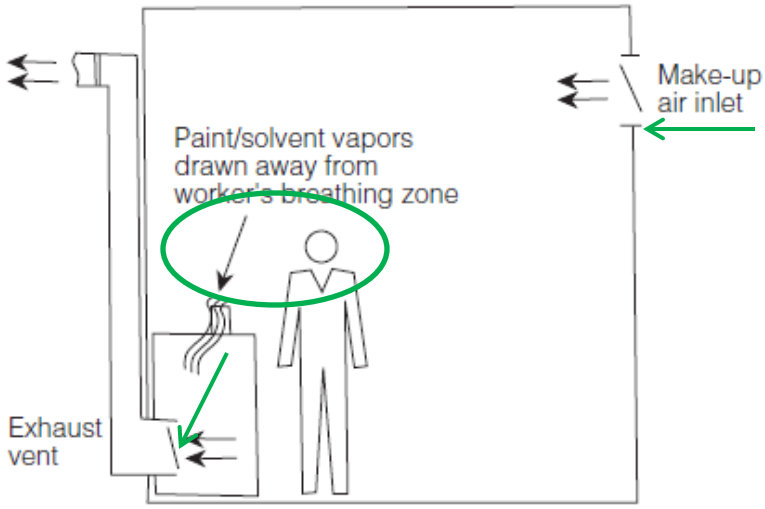

Figure 3. Draw vapors away from workers breathing zone

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Paint Mixing Room Tips

- Keep containers closed
- Exhaust gun wash vapors
  - Use safer alternative gun wash
  - Move gun washer out of the mixing room
- Use computer measurement system
- Wear supplied air or air-purifying respirator
- Protect your eyes
- Use nitrile gloves
  - Latex will only protect you from germs

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Toxics Use Reduction Institute (TURI) Testing

Product*	Effectiveness	EHS Rating	Example Costs
Acrastrip U.S. Polychemical 800-356-5530	92%	2.9	$189/5 gallon pail from U.S. Polychemical, expected duration 6 years
Oil Vanish Clift Industries 800-996-9901	93%	3.1	$11.50/12 oz. can from Home Depot
LPS®T91 Non-Solvent Degreaser LPSlabs.com, 800-241-8334	84%	3.3	$38.73/5 gallon pail from Amazon.com
Bio-circle CB 100 Walter Surface Technologies 860-298-1100	96%	3.6	$152/5 gallon pail from Amazon.com expected duration 6 years
Grime Off Foaming Cleaner and Degreaser Nutekgreen.com 440-996-2114	92%	3.6	$11/12 oz. can from Amazon.com
ZEP 70 Penetrating Lubricant – ZEP Industries 877-842-1551	86%	4.9	$12.99/12 oz. can from superkleendirect.com

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Toxics Use Reduction Institute (TURI) Resources

- Lab Testing effectiveness of chemicals
- Grant money to try safer alternatives
  - **Mike's Auto Body** (Fall River) will adopt safer alternatives for wheel weights, wheel cleaning, paint gun washing, and other applications
- Grant money to demonstrate safer alternatives
  - **912 Auto Center** (Dorchester) opened its doors to show off and demonstrate safer paint gun wash
- State House Recognition
  - **Allston Collision Center** (Allston) recognized at state house for being one of the first MA shops to us water based paint

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Toxics Use Reduction Institute (TURI)

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

TURI
Joy Onasch
978-934-4343
joy@turi.org
www.turi.org

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Why You Want to Work with OTA

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Items in the MassCAR Guide not Covered Today

General Auto Shop

- Spill Prevention
- Vehicle Fluid Evacuation Caddies
- Waste Oil Management

Auto Body Specific

- Vacuum Sanding
- Welding
- Solvent Recycling

Did We Miss Anything?

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SURVEY!

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Massachusetts Office of Technical Assistance

Thank you!

Tiffany Skogstrom	Marina Gayl
617-626-1086	617-626-1077
Tiffany.Skogstrom@state.ma.us	Marina.Gayl@state.ma.us

Questions?

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