Regulatory Update

MACT WWWW Reinforced Plastic Composites Production

Background

Under the Clean Air Act Amendments (CAAA), the Environmental Protection Agency (EPA) was directed to compile a list of categories of all *major sources* of hazardous air pollutants (HAPs) and to develop standards for each. *Major sources* are defined as those that emit more than 10 tons per year (tpy) of a single HAP (including styrene, methyl methacrylate, and methylene chloride) or 25 tpy of multiple HAPs. On July 16, 1992, the EPA published a list of source categories, which includes reinforced plastic composites production.

MACT and the Composites Fabrication Industry

Reinforced plastic composites production refers to manufacturing products and molding compounds that use thermoset resins or gel coats containing styrene. The MACT WWWW standards apply to all composites fabrication plants that are classified as major sources. Research and development operations and plants that only repair composites products or use less than 1.2 tpy of resin and gel coat are not required to comply with MACT WWWW. Operations or molds for making boat hulls or decks are subject to MACT VVVV.

Sources Subject to MACT WWWW

MACT WWWW divides composites production operations into three groups, sources required to:

1. Reduce HAP emissions by 95% with capture and control

- Existing centrifugal casting and continuous lamination/casting operations with combined HAPs of 100 tpy or more
- New open molding, centrifugal casting, continuous lamination/casting, pultrusion, sheet molding compound (SMC) and bulk molding compound (BMC), and mixing operations with combined HAPs of 100 tpy or more

Exception: New sources making "large open molded or pultruded parts" are required to comply with the same pollution prevention emission limits as existing sources and are not counted toward the 100 tpy threshold for 95% control.

2. Comply with work practices standards

- Closed molding operations using compression/injection molding

Modifications to existing Title V permits will be required to incorporate the applicable MACT requirements.

- Cleaning operations
- HAP-containing materials storage operations
- SMC and BMC operations
- Mixing operations
- Pultrusion of parts with more than 1000 reinforcements and cross section greater than 60 square inches

3. Comply with emission limitations

- All existing and most new open molding operations
- Most existing and new pultrusion operations
- New open molding and pultrusion operations that exceed 100 tpy threshold for 95% capture and control but make large parts
- Some centrifugal casting and continuous lamination/casting operations

Procedural Requirements

The effective date for MACT WWWW is April 23, 2003.

Existing major sources operating on or before August 2, 2001, will have three years to comply with MACT WWWW. These facilities must submit an Initial Notification to the state administering the standard (and copy the EPA regional office) by August 21, 2003, and either:

- Comply with the April 21, 2006 compliance date and have a Title V (federal) operating permit from the state in which the source is operating, or
- Meet a federally enforceable HAP emissions limit below the major source threshold prior to April 21, 2006, and obtain a Synthetic Minor operating permit from the state in which the source is operating.

New major sources constructed after August 2, 2001, must notify and receive approval from the state administering the standard (and the EPA regional office) prior to beginning construction on the new facility. A new source only exists where there has been no previous composites production.

Existing area sources (non-major) must document the reasons for non-applicability to MACT WWWW and maintain continuous usage records of HAPs to demonstrate non-applicability. If the existing area source becomes a major source after April 21, 2003, it must submit Initial Notification to the state within 120 days of becoming subject to the standard.

Compliance Options

There are several options for complying with pollution prevention-based emission limits:

Open molding and centrifugal casting

- Each resin and gel coat complies with HAP content and emission limits
- Weighted average of emissions for all resin and gel coat applications over a 12-month period does not exceed that of HAP emission limits
- Applicable HAP emission limit is met, and the same resin is used for all similar operations

Pultrusion operations

- Employ capture and control technology that achieves 60% emission reductions
- Use wet area enclosures and resin drip collection systems
- Install direct die injection systems with resin drip collection systems
- Employ preform injection systems
- Use any combination of the above options, provided that:
  - Each pultrusion machine satisfies the 60% reduction requirement, or
  - Weighted average emission reduction is at least 60% when wet area enclosures are assembled to achieve 60% reduction, and direct die and preform injection achieve 90% reduction

Continuous lamination/casting

- Employ controls to reduce HAP emissions by at least 58.5%
- Use controls to limit HAP emissions to no more than 15.7 pounds per ton of resin, gel coat, and any added HAP

Strategies for Compliance

In most cases, local air pollution agencies will enforce applicable MACT WWWW regulations through the Title V operating permit. Modifications to existing Title V permits will be required to incorporate the applicable MACT requirements. RMT can assist you in sorting through the complicated compliance options in MACT WWWW and in carefully crafting a permit that will preserve maximum flexibility for applicable sources.

Other Notification Requirements

Report	Submission Deadline
Notification of compliance status for operations complying with HAP content limits, application equipment requirements, or emission limits (except those using averaging)	May 21, 2006
Notification of compliance status for operations using averaging to comply with emission limits	May 21, 2007
Notification of sources complying by use of add-on control	Starting 60 days before the required control device performance test (conducted well before April 21, 2006 for existing sources and on startup for new sources)
Compliance report	Semi-annual
Startup, shutdown, malfunction (SSM) report for sources complying with use of add-on control	Within 2 working days action inconsistent with SSM plan

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