



Air Pollution Control Board

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COMPLIANCE ADVISORY

IMPLEMENTATION OF THE NEW AIRBORNE TOXIC CONTROL MEASURE (ATCM) TO REDUCE EMISSIONS OF HEXAVALENT CHROMIUM AND NICKEL FROM THERMAL SPRAYING OPERATIONS

On December 9, 2004, the California Air Resources Board (CARB) adopted an airborne toxic control measure (ATCM) Section 93102.5, Title 17, California Code of Regulations designed to reduce emissions of hexavalent chromium and nickel from stationary thermal spraying operations. The ATCM became effective on September 30, 2005.

The ATCM has different emission requirements depending on whether the hexavalent chromium or nickel thermal spraying operation is considered existing, new, or modified. **Existing** thermal spraying facilities are those that were in operation before January 1, 2005. **New** thermal spraying facilities are those that began initial operations on or after January 1, 2005. **Modified** thermal spraying operations are existing thermal spraying facilities that undergo certain physical changes in operation after January 1, 2005. In addition, new thermal spraying operations at existing facilities that have already been permitted to spray chromium or nickel are considered modified operations.

The ATCM also contains monitoring, inspection, maintenance, recordkeeping, and reporting requirements for thermal spraying operations. It does not apply to portable thermal spraying operations. A workshop was held by the San Diego County Air Pollution Control District (District) on Wednesday, January 25, 2006, to discuss implementation of the ATCM.

A summary of regulation requirements follows:

- Requires emissions be routed through an air pollution control system that meets specified ventilation and enclosure standards. Facilities are required to conduct an inward face velocity test in accordance with Appendix 2 of the ATCM, and a visual leak inspection in accordance with Appendix 3 of the ATCM. Facilities are required to notify the District at least 30 days prior to conducting the inward face velocity test. This test can be performed by site personnel and does not require the use of an independent tester.

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- Requires existing thermal spraying operations to comply with specified control efficiency standards by January 1, 2006. The control efficiency standards are dependent on current controlled emissions of chromium and nickel.
- Requires modified and new thermal spraying operations to use a control device certified by the manufacturer to achieve 99.97% control efficiency for particulates that are 0.3 micron in diameter.
- Requires new thermal spraying facilities be located at least 500 feet away from an area that is zoned residential or mixed use.
- Exempts remotely located and low emitting thermal spraying operations from the control efficiency, ventilation, and enclosure standards.
- Specifies that emissions be determined in accordance with specified emission calculation methods in the regulation or based on site-specific source test data.
- Specifies test methods to determine compliance with the control efficiency, ventilation, and enclosure standards and to determine emissions of hexavalent chromium and nickel. In addition, the regulation requires source tests be conducted by an independent tester.
- Requires a baseline emission inventory for hexavalent chromium and nickel be submitted to the District. A recent toxic emission inventory report will meet this requirement. If you do not have a recent toxic emission inventory report, the District will request one.

Under the California Health and Safety Code, the District is required to enforce State airborne toxic control measures. Facilities that spray hexavalent chromium or nickel containing compounds **MUST submit an application to the District by May 22, 2006**, so their permits can be changed to reflect the ATCM requirements. For more information regarding the application submittal and fee, please call Dave Byrnes at (858) 586-2736.

Included with this advisory are the CARB Thermal Spraying ATCM Advisory and Fact Sheet that further discusses the scope of the ATCM. Copies of the ATCM, the CARB ATCM Advisory, and the Fact Sheet may be obtained from the CARB website at <http://www.arb.ca.gov/coatings/thermal/thermal.htm>; or you can call Luann Serbesku at (858) 586-2755. If you have any questions regarding the ATCM, please contact Cara Bandera at (858) 586-2751 or by email at Cara.Bandera@sdcounty.ca.gov.



THERMAL SPRAYING ATCM ADVISORY

California Environmental Protection Agency
 **Air Resources Board**

September 2005

In December 2004, the Air Resources Board approved the “Airborne Toxic Control Measure to Reduce Hexavalent Chromium and Nickel Emissions from Thermal Spraying” (Thermal Spraying ATCM.) This regulation will be published in the California Code of Regulations (CCR) and will become legally effective on September 30, 2005 (see title 17, CCR, section 93102.5.) Provided below is some general information about the implementation of the Thermal Spraying ATCM. The text of the Thermal Spraying ATCM and additional details can be found on the ARB website

<http://www.arb.ca.gov/coatings/thermal/thermal.htm>.

Who must comply with the Thermal Spraying ATCM?

Businesses in California that conduct thermal spraying using materials that contain chromium, chromium compounds, nickel, or nickel compounds must comply with the Thermal Spraying ATCM. Thermal spraying processes include, but are not limited to: flame spraying, plasma spraying, electric arc wire spraying, high-velocity oxy-fuel (HVOF) spraying, and detonation gun spraying. The regulation does not apply to portable thermal spraying operations.

What are the permitting requirements for thermal spraying operations?

All unpermitted thermal spraying operations must submit permit applications to permitting agencies by **October 1, 2005**, if they use materials containing chromium, chromium compounds, nickel, or nickel compounds. New thermal spraying operations must submit permit applications prior to initial startup. The Thermal Spraying ATCM only requires that stationary sources submit permit applications, but some permitting agencies require permits for portable operations as well. To identify the permitting agency in your area, please refer to the website

<http://www.arb.ca.gov/app/dislookup/dislookup.php>. Point of contact information for permitting agencies can be found at <http://www.arb.ca.gov/capcoa/roster.htm>.

Who must submit emissions information?

All thermal spraying operations at stationary sources must report emissions information to permitting agencies by **October 1, 2005**, if they use materials containing chromium, chromium compounds, nickel, or nickel compounds. The emissions information must cover the time period between July 1, 2004 and July 1, 2005, unless the permitting agency approves the use of a different time period. Emissions can be calculated using the method contained in the Thermal Spraying ATCM, Appendix A

(<http://www.arb.ca.gov/coatings/thermal/thermal.htm>.) Emissions can also be quantified by using data from a stack test, but the use of stack test data must be approved by the permitting agency. For most thermal spraying operations, the emissions information needs to be submitted only once to establish a baseline and determine the type of control device required. However, permitting agencies may have additional submittal requirements.



THERMAL SPRAYING ATCM ADVISORY

What are the control requirements for existing thermal spraying operations?

The Thermal Spraying ATCM requires the use of an enclosure or booth and an add-on control device for existing thermal spraying operations that use materials containing chromium, chromium compounds, nickel, or nickel compounds. The required control efficiencies range from 90% (e.g., a water curtain) up to 99.97% (e.g., a HEPA filter), depending on the quantity of emissions. In addition, hourly emissions of nickel cannot exceed 0.1 lb/hr, since short-term exposure to nickel can cause adverse health effects (e.g., irritation and allergic sensitization.) After a facility owner or operator completes their initial emission inventory, they can determine the type of control device that is required by referring to the regulation, section (c)(1), (<http://www.arb.ca.gov/coatings/thermal/thermal.htm>) or by contacting their permitting agency. Thermal spraying operations must meet the applicable control requirements by **January 1, 2006**.

Are there additional requirements for new and modified thermal spraying operations?

Yes. The requirements for new and modified sources are more stringent. Both new and modified thermal spraying operations must use a control device that achieves at least 99.97% control efficiency (e.g., a HEPA filter), regardless of the emissions quantity. In addition, new thermal spraying operations cannot operate at all unless they are located outside of an area that is zoned for residential or mixed use and are located at least 500 feet from the boundary of an area that is zoned for residential or mixed use. New thermal spraying operations must also undergo a site specific analysis by the permitting agency to ensure protection of public health. Please note that a “new thermal spraying operation” is defined in the ATCM as one that begins initial operations on or after January 1, 2005.

What are the monitoring, inspection, and maintenance requirements?

A brief summary of monitoring, inspection, and maintenance requirements is provided below. For complete requirements and details, please refer to the regulation, section (e), (<http://www.arb.ca.gov/coatings/thermal/thermal.htm>) or contact your permitting agency.

Requirement	Frequency
Dry Filter – Record pressure drop reading across filter	Weekly
Water Curtain - Record water flowrate	Weekly
Conduct visual inspection to identify leaks	Every 90 days
Replace filters	Per manufacturer specifications
Measure inward face velocity	Annually

What kind of records do I need to keep?

Facilities must keep records of monitoring, inspection, and maintenance activities as described above and in the ATCM. Also, facilities must record the quantity of materials used for all thermal spraying products that contain chromium, chromium compounds, nickel, or nickel compounds. If equipment malfunctions or failures occur, records must be kept to document the circumstances of the breakdown and the repair actions taken. (Note: Many permitting agencies have specific reporting requirements for equipment breakdowns. Contact your permitting agency for details.) Records must be maintained on-site for at least five years and be readily accessible for inspection and review by your permitting agency.

Where can I get more information?

Visit the ARB website (<http://www.arb.ca.gov/coatings/thermal/thermal.htm>) or contact your permitting agency.



FACT SHEET

California Environmental Protection Agency
 **Air Resources Board**

THERMAL SPRAYING AIR QUALITY REGULATION

*This fact sheet contains a very brief explanation of a new regulation that applies to thermal spraying operations in California. For detailed information, please refer to the following web page:
<http://www.arb.ca.gov/coatings/thermal/thermal.htm> or contact Monique Davis at (916) 324-8182.*

What New Regulation Applies to Thermal Spraying in California?

On December 9, 2004, the Air Resources Board approved the adoption of a regulation called the "Airborne Toxic Control Measure to Reduce Emissions of Hexavalent Chromium and Nickel from Thermal Spraying" (referred to as the Thermal Spraying ATCM.) This regulation applies to thermal spraying operations throughout the State of California (e.g., flame spraying, twin-wire electric arc spraying, plasma spraying, and high-velocity oxy-fuel (HVOF) spraying.) The Thermal Spraying ATCM only applies to thermal spraying processes that use materials containing chromium, chromium compounds, nickel, or nickel compounds and it does NOT apply to portable operations. The regulation contains requirements for air pollution controls, permitting, monitoring, recordkeeping, and reporting.

Why Is ARB Regulating Thermal Spraying?

The Air Resources Board develops statewide regulations for the control of toxic air contaminants as a means of protecting public health. Thermal spraying can emit fumes that contain hexavalent chromium and nickel, which are toxic air contaminants. Both of these chemicals are human carcinogens that contribute to cancer and other adverse health impacts. Potential health risks from the inhalation of hexavalent chromium include: lung and nasal cancers; respiratory irritation; severe nasal and skin ulcerations and lesions; perforation in the nasal septum; liver and kidney failure; and birth defects. Inhalation of nickel can result in lung and nasal cancer; asthma and other respiratory ailments; and irritation and allergic sensitization.

Do I Need to Get a Permit for Thermal Spraying?

Thermal spraying operations in California must get a permit from their local air district, if they use materials containing chromium, chromium compounds, nickel, or nickel compounds. The Thermal Spraying ATCM does not contain a permitting requirement for portable thermal spraying operations, but some local districts may require a permit for portable activities. To find your local air district, check the following web page: <http://www.arb.ca.gov/app/dislookup/dislookup.php>. Contact information can be found at: <http://www.arb.ca.gov/capcoa/roster.htm>.

When Does the Regulation Become Effective?

As of April 8, 2005, the Thermal Spraying ATCM had not yet been formally adopted into the California Code of Regulations. It is expected that formal adoption will be completed by summer 2005. Important compliance dates to remember are provided below:

- Submit emission inventory to air district – October 1, 2005
- Submit air permit application (if you don't already have a permit) to air district – October 1, 2005
- Install air pollution enclosures and control devices – January 1, 2006

Can I Conduct Thermal Spraying Outside of a Booth?

No. The Thermal Spraying ATCM requires the use of enclosures, ventilation systems, and air pollution control devices that meet designated control efficiency standards.

How Does This Rule Apply to New Thermal Spraying Operations in California?

"New Thermal Spraying Operations" are those that start up as new businesses on or after January 1, 2005. (Please note that this does not include modification or expansion of existing thermal spraying operations and it only applies to operations that use chromium- or nickel-containing materials.) "New Thermal Spraying Operations" must have the maximum level of control (e.g., a HEPA filter), enclosure and ventilation system, and their requirements include the following: (1) They must be located outside of residential or mixed use zones and (2) They must be located at least 500 feet from the boundary of a residential or mixed use zone.

What Rules Apply to Portable Thermal Spraying Operations in California?

ARB is currently working with various stakeholders to address the issue of portable thermal spraying operations in California. In some air districts, portable thermal spraying operations are required to obtain permits and use enclosures that are vented to control devices. To ensure compliance, contact your local air district.