

SPECIAL Report



NATIONAL ROOFING CONTRACTORS ASSOCIATION

March 28, 1995

revisions made: September 26, 1997

This special report outlines the January 8, 1993 *Federal Register* notice regarding the Department of Transportation's (DOT) Research and Special Program Administration's (RSPA) revisions to the Elevated Temperature Materials (ETM) rule and includes the latest clarifications of, and changes to, the rule. This regulation applies to the transportation of liquid materials at temperatures above 212°F (100°C). This rule requires the communication of elevated temperature material hazards by means of markings and shipping papers; it also prescribes specific packaging requirements.

This revised rule is RSPA's response to NRCA's petition for reconsideration of the ETM rule. The supplemental information that NRCA included with the petition proved to RSPA that the ETM rule, as initially written, was unduly burdensome to roofing contractors and, as it applied to kettles and tankers, dangerous.

This rule applies only for the transport of heated (above 212°F) liquid materials, such as asphalt or coal tar, in kettles or tankers with a capacity greater than 118 gallons.

The new rule requires certain changes in kettle design (although existing kettles are generally grandfathered), and sets compliance dates for its various requirements. The balance of this report shows measures that need to be taken according to the prescribed date of compliance.

ALL KETTLES AND TANKERS IN USE AFTER OCTOBER 1, 1993

Shipping Papers

Regulated kettles or tankers must be accompanied with shipping papers that include the following description:

**Elevated Temperature Material, liquid, n.o.s. (Asphalt¹),
9, UN 3257, PG III, 1-750 gallon kettle**

This description must follow this exact format. It is not necessary to list the quantity being shipped; however, the capacity of the kettles must be shown as in this example. Also, required on the shipping paper is your 24-hour emergency response telephone number. The availability of

¹ Replace with "Coal Tar" if that is what is being transported

this number assists emergency crews in case of an accident. However, there is an interpretation of this requirement that states that the emergency response telephone be manned only during the hours when the hazardous material is in transit. (Shipping paper requirements can be found at §172.201 of the DOT's Hazardous Materials 181 (HM181) Regulations.)

Marking Requirements There are three options:

Option 1:

Regulated kettles and tankers will have to be marked on two opposing sides with the word "HOT" displayed in Gothic lettering in black and white on a contrasting background. The marking must be displayed on the kettle or tanker itself or in black lettering on a plain white square-on-point configuration having the same outside dimensions as a placard. (Exact dimensions can be found at HM181 §172.302(b).)

Regulated kettles and tankers with capacities less than 1,000 gallons must also be marked on two opposing sides with an orange panel or a white square-on-point configuration denoting the number 3257. This number indicates that the material being transported is at an elevated temperature. If the kettle or tanker has a capacity greater than 1,000 gallons, the marking must appear on both sides and both ends. (Details for the dimensions of the orange panel can be found in HM181 §172.332(b); and for the dimensions of the square-on-point configuration in HM181 §173.332(c) and §172.336(b)(1); and in HM181 §172.519 for placard specifications.)

Option 2:

RSPA recognized that keeping a permanent marking clean on a kettle may be difficult and therefore will allow the "HOT" marking to be displayed on a placard-like sign. This sign, having the same dimensions as a placard, may be used in placard holders already attached to the kettle or tanker. This will allow for the removal of the clean sign during kettle or tanker use and its replacement before the kettle or tanker is transported.

Option 3:

To avoid having to separately mark kettles and tankers with the word "HOT" and the 3257 panel, RSPA is allowing the two markings to be combined on a placard-like sign as follows:



Note: There has been some confusion as to the color of the interior panel when using this sign. According to the rule, the background of the entire sign is to be white when using the square-on-point configuration.

KETTLES AND TANKERS MANUFACTURED BEFORE OCTOBER 1, 1993

Kettles Kettles manufactured before October 1, 1993 are excepted from the packaging (design) requirements as follows:

KETTLE CAPACITIES LESS THAN 700 GALLONS: Can be used indefinitely as long as any closure, such as the lid, is secured so that it will resist being opened in case of an overturn.

KETTLE CAPACITIES GREATER THAN 700 GALLONS: Can be used indefinitely as long as any closure, such as the lid, is secured so that it will resist being opened in case of an overturn and no opening, such as a vent, is greater than 7.1 square inches (in²) during transport. If the vent is larger than 7.1 in², a securable cover must be placed over it reducing the opening to 7.1 in² or less.

Tankers Tankers manufactured before October 1, 1993 are excepted from the packaging requirements as long as closures (except permanent vent openings that are three inches or less in diameter) are securely closed during transport. Also, all closures must be able to withstand twice the weight of the load at all operating temperatures. The tanker must be substantially leak-tight so as to allow no more than a non-continuous flow of the contents if overturned.

KETTLES AND TANKERS MANUFACTURED AFTER OCTOBER 1, 1993

Kettles Kettles are differentiated in the rule as either having a "low-stability" or "high-stability". If the kettle has a ratio of track-width to fully-loaded center of gravity height of 2.5:1, then it is considered to have "high-stability"; a ratio less than 2.5:1 is considered to have "low-stability". Manufacturers will have to determine into which category their kettles fall.

Low-stability kettles must meet all the packaging requirements of the rule. However, after discussions with various manufacturers, only some of the smallest kettles appear to fall into the low-stability category. It is important to ask your manufacturer before purchasing a low-stability kettle if it meets all of DOT's packaging requirements.

High-stability kettles are broken down into two categories: those with capacities of 700 gallons or less and those with capacities greater than 700 gallons.

For kettles with capacities of 700 gallons or less:

- 1) Kettles must be designed so that closures (e.g., the lid) are securely closed during transportation, preventing the expulsion of the contents in an overturn;
- 2) Kettles must be designed and constructed to hold twice the weight of the contents in any orientation and operating temperature;
- 3) Kettles must be compatible with their contents at any temperature; and
- 4) Kettles must be durably marked using 3/16 inch characters with the manufacturer's name, date of manufacture, design temperature range, and maximum product weight.

this number assists emergency crews in case of an accident. However, there is an interpretation of this requirement that states that the emergency response telephone be manned only during the hours when the hazardous material is in transit. (Shipping paper requirements can be found at §172.201 of the DOT's Hazardous Materials 181 (HM181) Regulations.)

Marking Requirements There are three options:

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Regulated kettles and tankers with capacities less than 1,000 gallons must also be marked on two opposing sides with an orange panel or a white square-on-point configuration denoting the number 3257. This number indicates that the material being transported is at an elevated temperature. If the kettle or tanker has a capacity greater than 1,000 gallons, the marking must appear on both sides and both ends. (Details for the dimensions of the orange panel can be found in HM181 §172.332(b); and for the dimensions of the square-on-point configuration in HM181 §173.332(c) and §172.336(b)(1); and in HM181 §172.519 for placard specifications.)

Option 2:

RSPA recognized that keeping a permanent marking clean on a kettle may be difficult and therefore will allow the "HOT" marking to be displayed on a placard-like sign. This sign, having the same dimensions as a placard, may be used in placard holders already attached to the kettle or tanker. This will allow for the removal of the clean sign during kettle or tanker use and its replacement before the kettle or tanker is transported.

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To avoid having to separately mark kettles and tankers with the word "HOT" and the 3257 panel, RSPA is allowing the two markings to be combined on a placard-like sign as follows:



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- 5) Kettles must have unloading valves, such as draincocks, protected to avoid damage in an accident. RSPA is flexible in the design of the draincock protection. For example, they do not require that a bumper guard completely surround the draincock as long as it is adequately protected from impact.

For kettles with capacities greater than 700 gallons - in addition to the above:

- 1) Kettles must be designed so that not only they, but their closures are constructed to withstand twice the weight of the contents; and
- 2) All openings must be securely closed during transport except permanent vent openings. However, permanent vent openings may only be 7.1 in² or smaller during transport. If the vent is larger than this size, a securable cover must be placed over it reducing the opening to 7.1 in² or less.

Tankers Tanker packaging design must comply with the rule as written. The only exception is the allowance of a three-inch diameter (or smaller) opening for permanent vents.

CONCLUSION

Previously, RSPA had required drivers of tankers and trucks towing kettles containing asphalt or coal tar above 212°F to have commercial driver's licenses and to be drug tested because they were pulling hot kettles or tankers. Those requirements only apply to vehicles with a GVWR greater than 26,000 pounds or one that is carrying hazardous materials in an amount requiring placards.

Instead, because of NRCA's, its member contractors' and member manufacturers' input, RSPA now requires only minor kettle and tanker modifications for those currently in use. New equipment is subject to far less stringent regulations.

Also, all kettles and tankers currently in use would have been required to have numerous and costly retrofitting requirements. Even the marking requirements were more stringent.

Please note: Your local DOT may have more stringent requirements. This used to be the case in California, where the Vehicle Code required all drivers of marked vehicles to have commercial driver's licenses. This is no longer the case. NRCA is unaware of any state DOT that currently applies this rule differently than federal DOT.

As always, please contact NRCA with any questions or if you experience any compliance or interpretation problems with DOT personnel.