

Code of Operating Practice: Reconditioning and Remanufacturing Steel Drums for Use in Transporting Hazardous Materials

As a member of the Reusable Industrial Packaging Association (RIPA), this company is committed to support the continuing effort to improve the packaging reconditioning industry's responsible performance of its role in waste source reduction, recycling, and responsible packaging management. We pledge to manage our business according to the following guiding principles. We:

- Adhere to RIPA's Code of Operating Practice for steel drums.
- Recognize and respond to community concerns about packaging disposal and the operations of packaging reconditioning facilities.
- Produce packagings that are effective in safely containing all appropriate materials in transportation and storage.
- Make health, safety, and environmental considerations a priority in our planning for all existing and new processes.
- Counsel packaging users on the safe use, transportation, emptying, reuse, and recycling of packagings.
- Operate our plants in a manner that protects the environment and the health and safety of our employees and the public.
- Work with others to resolve problems created by past packaging disposal practices.
- Participate with government and others in creating responsible laws, regulations, and standards to safeguard the community, workplace, and environment.
- Promote the principles and practices of Responsible Packaging Management by sharing our experiences and offering assistance to others who produce, use, transport, or dispose of packagings.
- Foster the integrity and reputation of the industry by refraining from publishing knowingly false, misleading, or commercially disparaging statements or

advertisements about our products and services, or the products and services of competitors.

1.0 Basic recommendation.

Packaging that is reformed, de-dented, remarked, repainted, or mechanically altered, or that must be mechanically processed in any way to be able to meet the design-type tests, may not be reused without first being reconditioned. Performance of any step of the reconditioning process should be accompanied by performance of all reconditioning steps. That is, if any element of reconditioning is done (e.g., cleaning, changing non-integral gaskets) then the entire reconditioning process should be completed in accordance with this Code, including cleaning to original materials of construction, replacement of gaskets, inspection for quality and testing for leaks. This is to assure that any reference to reconditioning provides the filler of a drum with total packaging integrity.

2.0 Reconditioning firm.

2.1 A business that properly reconditions steel drums is one that possesses the necessary equipment, and processes drums in accordance with all of the provisions described of this Code of Operating Practice. Where required, a drum reconditioning firm shall be registered or licensed by appropriate government authorities and shall mark reconditioned packagings with the firm's identification as its certification of regulatory compliance.

2.2 The reconditioning firm must maintain a documented quality control program.

2.3 The reconditioning firm shall encourage plant reviews during normal operating hours by any emptier or customer.

2.4 In addition to meeting the details of this Code of Operating Practice, the reconditioning firm should be in compliance with all applicable government regulations pertaining to safety and health, and environmental protection.

3.0 Steel Drum Reconditioning.

3.1 ***Transportation of drums containing residues.*** Drums that have been used for the transportation of hazardous materials that have not been cleaned and purged must be transported with all closures in place, with all original hazard markings and labels legible.

3.2 ***Acceptance of drums containing residues; "empty" drums.*** No drums may be accepted that are not empty, unless the reconditioning firm holds permits issued by appropriate environmental authorities to receive and process hazardous wastes. "Empty" means that the drum must be as empty as possible using practices commonly employed to remove materials from drums, including pouring, pumping, and aspirating. In addition, no more than 2.5 cm (1 inch) of residual material may remain in the bottom of the drum. If more material may be poured out of the drum, then it is not empty. If everything is poured out, but more than 2.5 centimeters (1 inch) remain on the bottom, the drum is not empty. If the residual material is listed by EPA in 40 CFR 261.33(e) as a "P-listed" acute hazardous waste, the drum is not deemed empty unless it has been triple-rinsed using an effective solvent, or has been cleaned by a method shown to achieve equivalent removal.

California reconditioners may not accept drums that do not comply with the state empty packaging rule 22 CCR 66261.7.

3.3 ***Empty drum certification.*** Every person providing drums containing any residues to a reconditioning firm, regardless of prior contents, shall sign an "Empty Drum Certification" on each occasion that drums are offered, verifying that the drums are empty in accordance with the explanation of that term in 3.2, above.

3.4 *Rejection of drums that are not empty.* Drums containing residues of prior contents, that are to be loaded on the reconditioning firm's trucks by the reconditioning firm's employees, may be rejected if they appear to be unduly heavy because of the unintended retention of product. Drums brought to the reconditioning firm's plant, or loaded on the reconditioning firm's vehicle by the emptier's employees, may be rejected at the reconditioning firm, if, upon internal inspection, they are found to be not empty. Rejected drums shall be returned to the emptier as product and the emptier shall be advised of the reason for the rejection.

3.5 *Inspection of incoming drums.* The reconditioning firm must inspect each raw drum when it is unloaded from transportation equipment. All drums must be inspected to make certain they are empty, to determine the original specification of the drum, and to determine whether the drum is damaged or unreconditionable and therefore must be prepared for scrap in accordance with 3.9, below.

3.6 Closed head drum processing.

3.6.1 All former contents and any corrosion must be removed. The interior must be treated for corrosion resistance. Controls must be established to prevent condensation.

3.6.2 An internal visual inspection must be performed. If any of the prior contents remain after performance of the reconditioning process, or if rust is evident, the drum must be rejected or be subjected to further processing.

3.6.3 Chimes must be mechanically straightened to reform and reseal them. Drums must be de-dented using internal pressure sufficient to restore original shape and contour.

3.6.4 The drum exterior must be chemically cleaned, mechanically brushed, or abrasive blasted to remove labels, coatings, and corrosion. The exterior surface shall be properly prepared for painting.

3.6.5 The thoroughly cleaned drum must be leak tested by complete immersion in water and application of an internal air pressure of at least 20 kPa (3 psi) for Packing Group II and III drums and 30 kPa (4 psi) for Packing Group I drums, for at least 5 seconds, or by using DOT-approved alternative test methods of equal sensitivity. Drums found to be leaking must be rejected or repaired by welding or brazing.

3.6.6 Before painting, drums must be inspected for deterioration and drums having visible pitting, significant reduction in parent metal thickness from rust, corrosion, or other material defects, or which have not been returned to original shape and contour, must be rejected.

3.6.7 All closures must be removed, cleaned, and reinserted with suitable new gaskets. Bungs and flanges must show no damaged threads and must ensure a leakproof seal.

3.6.8 The drum must be painted with a new exterior coating to provide a protective and decorative finish.

3.6.9 The completed drum must be marked with the reconditioning firm's name and addressor registered symbol (e.g., identification number), and the year of testing. Drums marked in accordance with the US standards must include the nation in which the reconditioning was performed, the letter "R", and the letter "L" for drums that have been successfully leakproofness tested. If the original manufacturer's durable full UN marking has been removed in the reconditioning process, it must be replaced by the reconditioner before the drum may be used again to transport hazardous materials. The reconditioner's replacement mark may show a performance level below that originally marked by the drum manufacturer, but in no case may a reconditioner mark a higher performance level than was embossed on the bottom of the drum as part of its original "birth certificate". The reconditioning firm's identity and "R" marking is a certification that the drum meets all applicable regulations and this Code of Operating Practice.

3.7 Open head drum processing.

3.7.1 Open head drums and closed head drums from which the top heads have been removed, must be cleaned thoroughly. All former contents and corrosion must be removed. If the top head is removed by cutting or unrolling, the side wall must be curled or beaded to accept an open head cover.

3.7.2 When thermal processing is utilized, drums with covers removed must be conveyed through a drum reclamation furnace which subjects both the interior and the exterior of the drum to temperatures sufficient to prepare the drum for abrasive cleaning. The charred material and former linings and coating, as well as rust, must be removed through abrasive blasting on the interior and exterior, reducing the drum to bare metal.

3.7.3 The contour of the drum must be mechanically restored. Chimes must be mechanically straightened to reform and reseal them. Drums must be expanded or re-rolled to restore original shape and contour.

3.7.4 When required by applicable regulations each open head drum, except its removable head and adjacent bead area, must be leak tested by complete immersion in water and application of an internal air pressure of at least 20 kPa (3 psi) for Packing Group II and III drums and 30 kPa (4 psi) for Packing Group I drums, for at least 5 seconds, or by using DOT approved alternative test methods of equal sensitivity. Drums found to be leaking must be rejected or repaired by welding or brazing.

3.7.5 Drums must be inspected for deterioration and those having visible pitting, significant reduction in parent metal thickness from rust or corrosion, other material defects, or which have not been returned to original shape and contour, must be rejected.

3.7.6. All closures must be removed, cleaned, and reinserted with suitable new gaskets. Bungs and flanges must show no damaged threads and must ensure a leakproof seal.

3.7.7 The closing rings must be reformed and cleaned, or replaced.

3.7.8 The drum must be painted with a new exterior coating to provide a protective and decorative finish. The interior coating or treatment, if required, must be applied and cured in accordance with the coating manufacturer's specifications.

3.7.9 The completed drum must be marked on the top or side with the "First Line" UN mark, the reconditioning firm's name and address or registered symbol (identification number), the year of testing, a reference to the nation in which the reconditioning was performed, the letter "R" , and the letter "L" for drums that have been successfully leakproofness tested. If the original manufacturer's durable full UN marking has been removed in the reconditioning process, it must be replaced by the reconditioner before the drum may be used again to transport hazardous materials. The reconditioner's replacement mark may show a performance level below that originally marked by the drum manufacturer, but in no case may a reconditioner mark a higher performance level than was embossed on the bottom of the drum as part of its original "birth certificate". The reconditioning firm's identity marking constitutes a certification that the drum meets all applicable regulations and this *Code of Operating Practice*.

3.8 ***Remanufactured drums.*** Drums converted from DOT specification drums into UN drums, from one UN type to another type, or which have had integral structural components replaced, are remanufactured drums. All requirements applicable to the manufacture of new drums apply to these drums.

3.9 ***Rejected drums.*** Drums that have been rejected during the inspection processes and cannot be repaired for hazardous materials service are to be cleaned and directed to nonhazardous material service or prepared for scrap. When preparing drums for scrap, the drum interior and exterior must be cleaned using an effective cleaning agent, or must be thermally neutralized in a drum reclamation furnace, thereby removing all foreign matter, prior residues, labels and decorative coatings, and the drum then must be mechanically or hydraulically crushed or shredded.

4.0 Environmental and employee protection.

4.1 *Storage of drums containing residues.* Unreconditioned drums must be stored with all closures in place, and must be inspected periodically to assure no residual contents are leaking. All drums that are obviously unfit for reconditioning should be rejected immediately and should be prepared for scrap in accordance with the preceding paragraphs. Destructive corrosion of drum inventory from atmospheric and ground moisture must be avoided.

4.2 *Accumulated residues from drums.* All wastes generated in the reconditioning process must be managed in full compliance with applicable regulations governing such wastes.

4.3 *Wastewater and air emissions.* Discharges of wastewater from the reconditioning plant to the environment or to the sewer system, and emissions to the atmosphere, must meet applicable water and air pollution regulations for that geographical area. Offensive emissions must be minimized whether subject to government controls or not.

4.4 *Employee protection.* Exposure of employees to any chemicals in the workplace, including the contents of incoming drums, must be reduced to the extent practicable. At a minimum, this necessitates the reconditioning firm providing and requiring the use of effective personal protective equipment.

4.5 *Training.* Employees must be trained in the proper performance of their jobs, including awareness of the hazards of the process chemicals to which they are exposed and of the importance of compliance with this Code and all government regulations.

4.6 *Company vehicles and drivers.* The reconditioning firm shall employ drivers to operate company vehicles in compliance with standards of the Federal Motor Carrier Safety Administration on the qualification of drivers, including provisions relating to

alcohol or other substance abuse. Company vehicles shall be maintained in safe operating condition.

4.7 *Fire Safety.* All practical precautions against fires must be implemented, including having adequate fire extinguishing capability, contingency planning, effective coordination with local emergency response authorities, and good housekeeping to minimize opportunities for ignition and to facilitate employee evacuation in emergencies.

5.0 Public statements and advertising

5.1 Each RIPA member shall foster the integrity and reputation of the packaging industry generally and the RIPA membership specifically by refraining from publishing knowingly false, misleading or commercially disparaging statements or advertisements.

5.2 Member's public statements and advertisements shall not knowingly misrepresent fact or law, or create a negative impression or expectation about competitive products and services unless such statement or advertisement is based upon facts which are amenable to independent measurement and verification.