U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

JUN 18 2004

Mr. Kurt Colborn
Director, Technical Services
MHF Logistical Solutions
800 Cranberry Woods Drive, Suite 450
Cranberry Township, PA 16066

Reference No.: 04-0147

Dear Mr. Colborn:

This is in response to your June 1, 2004 letter regarding the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you seek concurrence that your Super Load Wrapper™ (SLW) gondola lining system meets the general design requirements of § 173.410.

Based on the information you provided, it is our opinion that a gondola railcar with a SLW lining system would satisfy the general design requirements of § 173.410.

I trust this satisfies your request.

Sincerely,

Hattie L. Mitchell

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Standards

040147

173.427(b)(4)

Betts
§173.427(b)(4)
RAM
04-0147

800 Cranberry Woods Drive, Suite 450, Cranberry Township, PA 16066 T 724.772.9800 F 724.772.9850 W www.mhfls.com

Mr. Edward Mazzullo
Director of Hazmat Standards
400 7th Street, SW
Washington, DC 20590-3012

June 1, 2004

SUBJECT: Interpretation for Package Compliance with 49 CFR 173.427(b)(4)

Dear Mr. Mazzullo,

The purpose of this letter is to request confirmation of our interpretation of the requirements of 49 CFR 173.410 and as cited by 173.427(b)(4). Specifically, this letter seeks concurrence that the packaging described herein meets the subject requirement.

MHF Logistical Solutions' Packaging Solutions Division manufactures the Super Load Wrapper™ (SLW) gondola lining system. The SLW is described in the enclosed literature and specifications (Attachment 1).

When used as a liner in a gondola (nominally 53' or 65' foot gondolas), the SLW/gondola system provides a strong, durable, sift-proof packaging for bulk materials (such as soils and debris). The SLW/gondola system has been used successfully in thousands of railcar shipments in accordance with the current 173.427(c)(1).

We believe that the SLW, in combination with a standard rail gondola, also meets the general design requirements of 173.410. Our evaluation of the package against the design criteria is attached (Attachment 2). We recognize that certification and acceptance of the package is our responsibility as the shipper. However, this package includes disposable components, is not equipped with some of the features described in 173.410, so we are requesting USDOT concurrence with our evaluation of the package as presented in this document.

MHF-LS has obtained verbal concurrence with our package assessment from Kurt Eichenlaub of your Office, this letter seeks confirmation in a written interpretation. Please consider this letter and its attachments in your response to the following packaging assessments, subject to usage limitations described in our package evaluation:

1. The MHF-LS Super Load Wrapper™ qualifies as a packaging when used in conjunction with a gondola for LSA material in accordance with 49 CFR 173.427(b)(4), or as unpackaged in accordance with CFR 173.427(c)(1). In order to be considered a valid packaging meeting either standard, the Super Load Wrapper™ must be contained by the rigid structure of a railcar gondola. More than one Super Load Wrapper™ may be used as a packaging in a single gondola so long as the gondola's structural support of the Super Load Wrapper™ is not compromised..

2. The Super Load Wrapper™ provides the required barrier for release of package contents, but either the Super Load Wrapper™ or the gondola may be marked and labeled as the package at the shipper's discretion.

Please feel free to contact me at (724) 772-9800, ext. 5560 if you have any questions about this request. Thank you for your assistance.

Respectfully submitted,

Kurt Colborn
Director, Technical Services
MHF Logistical Solutions

ATTACHMENT 1

Super Load Wrapper

Descriptive Literature and Specification

MHF PACKAGING SOLUTIONS

800 Cranberry Woods Drive, Suite 450, Cranberry Township, PA 16066
Phone: 724.772.9800 Ext: 5542 Fax: 724.772.9850
Erin Grimm, Transport Plastics Program Manager
E-mail: erin.grimm@mhfls.com Web: www.mhfls.com

June 1, 2004

To: Kurt Colborn, MHF-LS

Fm: Erin Grimm, MHF-PS

Cc: Shelia King, MHF-PS, File

Re: MHF-PS Super Load Wrapper

Kurt-

The Super Load Wrapper (SLW) is just one of the products that MHF Packaging Solutions' facility in Sweetwater, TN has been manufacturing for more than ten years. The SLW is considered the premier gondola railcar liner in the industry. The SLW is designed for shipments of bulk material in a gondola railcar to meet the US DOT definition of a "strong tight" shipment. It is the proven design and material strength of the SLW that has allowed more than 10,000 gondola railcar shipments to ship their bulk materials with less than ½ of 1% liner puncture or failure.

The dynamic design of the SLW sets itself apart from the traditional static gondola railcar liner. A traditional liner merely covers the inner walls and floor of the railcar leaving enough material to cover the top of the load. These liners are used primarily to protect the railcar from contamination by the loaded bulk material and reduce potential clean out requirements.

The SLW is designed and manufactured to "seal" and "protect" a bulk gondola railcar load. The design and proper use of the SLW closure system allows the shipper to seal the bulk load in the SLW and protect the load from wind and weather elements. Additionally, the proprietary closure system of the SLW dynamically reacts and protects the bulk load from breaching the liner when the load shifts within the railcar during rail transit.

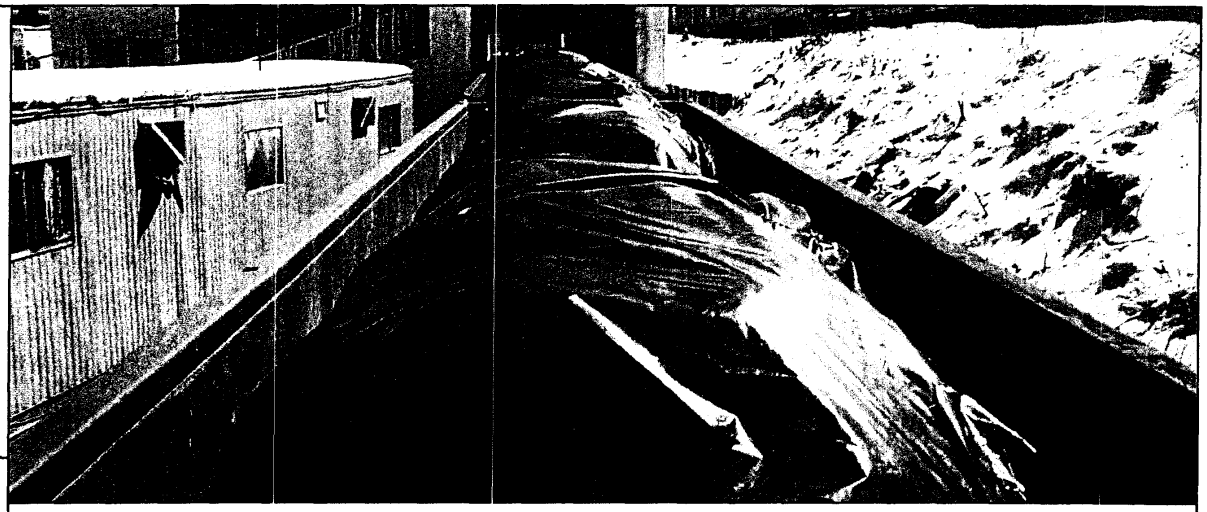
MHF-PS does manufacture and fabricate the "traditional" gondola railcar liners and the cost difference due to the quality of materials used in the construction and assembly is another good indicator of the difference in strength and quality.

Please feel free to contact me should you have additional questions regarding the SLW or any MHF-PS product.

MHF LOGISTICAL SOLUTIONS

800 Cranberry Woods Drive, Suite 450, Cranberry Township, PA 16066
Phone: 1.877.452.9300 Fax: 724.772.9850 Web: www.mhfls.com

PRODUCT INFORMATION



Super Load Wrapper™ Gondola Lining System *MHF Packaging Solutions Division*

Specifications

- Liner sizes accommodate 53' and 65' gondolas (custom sizes are also available)
- 7.5 oz./SY Nominal woven and coated high density polypropylene fabric
- Reference thickness 18 mils. nominal
- Color – black
- Weight approximately 160 lbs.

Equipment Features

- Our Super Load Wrapper™ is the premier gondola car liner in the industry
- The Super Load Wrapper™ System allows a shipment of bulk material in a rail gondola to meet the US DOT definition of "Strong-Tight" shipment
- The design and strength of the Super Load Wrapper™ allows it to be used for debris and aggressive materials that other liner systems cannot withstand
- All supplies required to install and secure the liner for shipment are included
- The application of this product also aids in keeping the car clean and provides for easier off-loading at destination
- Lining system has been in use successfully since 1988
- Form-fit in car design

Transport Plastics, Inc.
190 Transport Drive • PO Box 12 • Sweetwater, TN 37874 • 800-603-8277 • 423-337-2184 (Fax)

Product Specification Number: 100040
Date: 10-24-03
Revision: 3

Super Load Wrapper Rail Car Liner

Product Information

Item Number:	10-SLW5310
Item Description:	Super Load Wrapper Rail Car Liner
Finished Size:	53.5 ft. x 10.5 ft. x 6 ft. x (10 ft. top flaps x 2) +/- 1"
Finished Package:	Folded and taped to form fit into car and for easy installation
Flaps:	2 fully overlapping top flaps 2 end flaps
Closure System:	33 tie closures consisting of ¼" braided black polypropylene rope and corresponding receiver holes.
Tare Weight:	160 lbs.

Fabric Information

Material Type:	Woven & coated high density polypropylene (HDPP)	
Weave:	Nominal 12 X 12 ppi woven black HDPP scrim using 1600 denier tapes	
Weight:	Nominal 7.5 oz./ square yard +/- 10%	
Reference Thickness:	18 mil	
Tensile Strength: (Grab Method)	Warp – 325 lbs Weft – 310 lbs	*ASTM D5034*
Tear Strength: (Trapezoidal Tear Method)	Warp - 85lbs Weft - 85 lbs	*ASTM D4533*
Mullen Burst:	540 psi	*ASTM D3786*
Coating Thickness:	2.0 mil average, 2 sides	
Scrim Type:	Black PP tapes, 1600 Denier	
Color:	Black	

ATTACHMENT 2

Qualification of the MHF Logistical Solutions' Super Load Wrapper™ (in conjunction with a standard gondola car) to 49 CFR 173.410 and 173.24

Requirement: 49 173.410(a) The package can be easily handled and properly secured in or on a conveyance during transport.

Fulfillment: The Super Load Wrapper™ (SLW) weighs 160 pounds empty, and is readily installed into a standard gondola car. The SLW is self-securing to the gondola when filled, the bulk load ensures the SLW is stable and secure within the confines of the gondola. The SLW/gondola package is as readily handled as a standard railcar. The gondola is viewed as a required part of the package system, but for the purposes of compliance with this section is seen as external, removable and reusable handling device.

Requirement: 49 CFR 173.410(b) Each lifting attachment that is a structural part of the package…

Fulfillment: The SLW is not equipped with lifting attachments of any kind; this requirement does not apply. The rope lacing closure system used to secure the closure flaps of the SLW cannot be readily mistaken for lifting attachments. Further, these lightweight ropes would fail before damaging the package or allowing any movement at all in the filled 80-100 ton SLW. The gondola car is not equipped with lifting attachments and is not designed for lifting.

Requirement: 49 CFR 173.410(c) The external surface, as far as practicable, will be free from protruding features and will be easily decontaminated.

Fulfillment: The woven and coated high-density polypropylene construction of the SLW is readily wiped free of non-fixed contamination should its external surface become contaminated during loading. Further, the SLW is disposable and need not be decontaminated. The SLW provides a durable barrier to material release, and is intended to minimize or prevent the potential contamination of the gondola car from the SLW contents. Finally, destination disposal facilities are generally equipped to perform decontamination of gondola car surfaces as a routine matter if necessary.

Requirement: 49 CFR 173.410(d) The outer layer of packaging will avoid, as far as practicable, pockets or crevices where water might collect.

Fulfillment: The smooth surface of the SLW sheds water readily. Thousands of shipments of material have been successfully shipped to disposal sites having strict prohibitions against free liquids. Standard gondola cars are reasonably free of water-trapping features. In addition, MHF-LS gondolas are equipped with drain ports to allow water drainage from rain and snow melt.

Requirement: 49 CFR 173.410(e) Each feature that is added to the package will not reduce the safety of the package.

Fulfillment: The SLW/gondola package is not generally amenable to the addition of features of any kind. Some shippers may wish to add a tarp cover or hard lid to the gondola to supplement containment. Standard gondola covers, properly installed and secured, will not adversely impact the safety of this package.

Requirement: 49 CFR 173.410(f) The package will be capable of withstanding the effects of any acceleration, vibration, or vibration resonance that may arise under normal conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole and without loosening or unintentionally releasing the nuts, bolts, or other securing devices even after repeated use.

Fulfillment: The SLW is a single use packaging. The SLW has been proven effective in thousands of shipments of bulk material without degradation or the loss of material due to acceleration, vibration, or vibration resonance. The closure system, effected in accordance with manufacturer-supplied instructions (Attachment 3), has proven effective against the release of contents in rail transportation, and against wind and rain penetration.

Requirement: 49 CFR 173.410(g) The materials of construction of the packaging and any components or structure will be physically and chemically compatible with each other and with the package contents. The behavior of the packaging and the package contents under irradiation will be taken into account.

Fulfillment: The nominal 18 mil thickness of the woven SLW has been demonstrated to provide excellent physical integrity during normal rail transportation. The SLW is widely used for shipment of large quantities of radioactively-contaminated soil and debris. Degradation due to radiation exposure is not an issue for disposable SLWs used for LSA materials. The chemical resistance and suitability of the SLW for other-than-radiological contaminants will be evaluated by the manufacturer and shipper on a case-by-case basis.

Requirement: 49 CFR 173.410(h) All valves…

Fulfillment: The SLW is not equipped with valves. The closure system can only be defeated by deliberate action.

Requirement: 49 CFR 173.410(i) For transport by air…

Fulfillment: The SLW is not suitable for air transportation, and for qualification to 173.410 the gondola is considered to be a component of the packaging, providing structural support to to the SLW.

Requirement 49 CFR 173.24(a) Applicability.

Fulfillment: The requirements are applicable.

Requirement 49 CFR 173.24(b) Each package used for the shipment of hazardous materials shall be designed, constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incident to transportation –

Requirement 49 CFR 173.24(b)(1) Except as otherwise noted in this subchapter, there will be no identifiable (without the use of instruments) release of hazardous materials to the environment;

Fulfillment: The SLW properly installed and closed within a standard gondola car has been specifically designed to provide a barrier against the release of its contents. Thousands of rail shipments using the SLW/gondola packaging system have been successful in meeting this requirement. MHF-LS maintains that a lid for the gondola is <u>not</u> a required addition to the package to meet 49 CFR173.410; lids are a feature of gondolas meeting more stringent IP-2 requirements in exemptions such as DOT-E-12800. Use of the packaging is limited to the rated capacity of the gondola car. The SLW provides the barrier to release of contents; the gondola car provides required structural support for the SLW package.

Requirement 49 CFR 173.24(b)(2) The effectiveness of the package will not be substantially reduced…during transportation.

Fulfillment: As discussed in the fulfillment of 49 CFR 173.410(g) (above) the SLW represents a strong and durable liner, and an effective leak preventing package when used in conjunction with a standard rail gondola.

Requirement 49 CFR 173.24(b)(3) There will be no mixture of gases or vapors in the package which could... reduce the effectiveness of the packaging.

Fulfillment: The SLW is typically used for bulk soil and building material in LSA shipments of radioactive material. Gases or vapors are not normally present, and would normally be released from the package through its overlapping closures if they were present. The impact of gases and vapors on the package performance will be evaluated by the shipper and manufacturer on a case-by-case basis as contents warrant.

Requirement 49 CFR 173.24(b)(4) There will be no hazardous material residue adhering to the outside of the package during transport.

Fulfillment: The internal surface of the overlapping closure of the SLW covers the sides of the gondola during filling; hence, external surfaces are protected from contamination. In the event external contamination does occur, the external surfaces are (and will be) readily decontaminated.

Requirement 49 CFR 173.24(c) Authorized packagings. A packaging is authorized for a hazardous material only if –

Requirement 49 CFR 173.24(c)(1) The packaging is prescribed or permitted ...or

Fulfillment: This evaluation of requirements is intended to qualify the package to the general design requirements of 49 173.410 for shipment of LSA materials as permitted by 172.101 and described in 173.427(b)(4).

Requirement 49 CFR 173.24(c)(2) [or] The packaging is permitted under, and conforms to, provisions contained in 171.11, 171.12, 171.12a, 173.3, 173.4, 173.5, 173.7, 173.27, or 176.11 of this subchapter.

Fulfillment: The packaging is permitted in accordance with 173.24(c)(1)

171.11	*N/A transport by air not appropriate for the packaging*
171.12	*N/A international shipping not planned, appropriate certifications and shipping documentation will be provided on a case by case basis if required.*
171.12a	*See 171.12*
173.3	*(a) SLW manufacture is available for inspection; (b) SLWs are used in rail transport only; (c) N/A, pertains to salvage drums/packaging*
173.4	*Small quantity exceptions N/A – the SLW/gondola is a bulk packaging*
173.5	*N/A – pertains to agriculture*
173.7	*No DOD-specific qualification of this package is proposed, this package qualification is based solely on DOT regulations*
173.27	*N/A transport by air not appropriate for the packaging*
176.11	*N/A transport by vessel is not proposed at this time*

Requirement 49 CFR 173.24(d) Specification packagings and UN standard packagings…

Fulfillment: N/A, 49 CFR 173.427(b)(4) permitted packaging requires compliance with 173.410 and 173.24and is the subject of this evaluation.

Requirement: 49 CFR 173.24(e) Compatibility. (e)(1) Even though certain packagings are specified in this part, it is, nevertheless, the responsibility of the person offering a hazardous material for transportation to ensure that such packagings are compatible with their lading. This particularly applies to corrosivity, permeability, softening, premature aging, and embrittlement.

Fulfillment: The nominal 18 mil thickness of the woven SLW has been demonstrated to provide excellent physical integrity during normal rail transportation. The SLW is widely used for shipment of large quantities of radioactively-contaminated soil and debris. Degradation due to radiation exposure is not an issue for disposable SLWs used for LSA materials. The chemical resistance and suitability of the SLW for other-than-radiological contaminants will be evaluated by the manufacturer and shipper on a case-by-case basis.

Requirement: 49 CFR 173.24(e)(2) Packaging materials and contents must be such that there will be no significant chemical or galvanic reaction between the materials and contents of the package.

Fulfillment: The HDPE construction of the SLW is reasonably inert, has no identifiable reaction with gondola materials of construction, and no significant reaction with radioactively contaminated bulk soil and debris.

Requirement: 49 CFR 173.24(e)(3)(i) Plastic used in packagings and receptacles must be of a type compatible with the lading and may not be permeable to an extent that a hazardous condition is likely to occur during transportation, handling, or refilling.

Fulfillment: See fulfillment of 49 CFR 173.24(e) above. Also, "refilling" is N/A for the SLW, a single-use container.

Requirement: 49 CFR 173.24(e)(3)(ii) Each plastic packaging or receptacle which is used for liquid hazardous materials…

Fulfillment: N/A. Qualification of the SLW for liquids is not proposed at this time.

Requirement: 49 CFR 173.24(e)(4) Mixed contents. Hazardous materials may not be packed or mixed together in the same outer packaging with other hazardous or non-hazardous materials if such materials are capable of reacting dangerously with each other....

Fulfillment: Qualification of the SLW as a packaging meeting 173.410 is proposed for homogenous bulk solids. No mixing of hazardous materials within the packaging is proposed.

Requirement: 49 CFR 173.24(e)(5) Packagings used for solids, which may become liquid at temperatures likely to be encountered during transportation, must be capable of containing the hazardous material in the liquid state.

Fulfillment: N/A. Qualification of the SLW is proposed only for bulk solids which remain solid at temperatures likely to be encountered in transport.

Requirement: 49 CFR 173.24(f)(1) Closures. Closures on packagings shall be so designed and closed that under conditions (including the effects of temperature, pressure, and vibration) normally incident to transportation –

(i) Except as provided in paragraph (g) of this section, there is no identifiable release of hazardous materials to the environment from the opening to which the closure is applied; and

(ii) The closure is leakproof and secured against loosening. For air transport...

Fulfillment: The SLW flaps self seal the contents when closed. A rope-lacing secures the flaps against opening during transport. The closure is similar to that used on MHF-LS IP-1 and IP-2 tested packagings. In addition, the gondola, which is part of the packaging to meet 173.410, provides protection of the SLW closure, as well as a sturdy secondary containment. A standard procedure has been developed to instruct users in proper closure of the package, and is provided as Attachment 3. MHF-LS maintains that a lid for the gondola is <u>not</u> a required addition to the package to meet 49 CFR173.410; lids are a feature of gondolas meeting more stringent IP-2 requirements in exemptions such as DOT-E-12800.

Requirement: 49 CFR 173.24(g) Venting.

Fulfillment: N/A. The SLW/gondolapackaging is not intentionally vented, not utilized for air transport, and not currently proposed for containment of flammable gases.

Requirement: 49 CFR 173.24(h) Outage and filling limits.

Fulfillment: N/A. The SLW/gondola packaging is not proposed for liquids, compressed gases, or cryogenic liquids.

Requirement: 49 CFR 173.24b Additional General Requirements for Bulk Packagings

Fulfillment: N/A. The SLW/gondola packaging is not a tank, and proposed for liquids, compressed gases, or cryogenic liquids.

ATTACHMENT 3

Super Load Wrapper

Standard Operating Procedure for Installation and Closure

TRANSPORT PLASTICS, INC.
Standard Operating Procedure

Procedure for Installing Super Load Wrapper Into Gondola Rail Car

1.0 Scope

This procedure provides the instructions to properly install and secure the rail car designated Super Load Wrapper.

2.0 Procedure

2.1 Ensure a minimum of two personnel participate in the liner installation and closure.

2.2 Open package with care not to damage the liner and remove the outer packaging.

2.3 Place the load wrapper in the center of the rail car.

2.4 Unroll the wrapper to each end of the rail car.

2.5 Walk down the center aisle of the single layer of material and pick up the hem of liner and place over the side of the car. Repeat on the other side of car. Note: Direction labels are on the edge of side flaps.

2.6 Place the end flaps over the ends of the rail car. There should be a 6" minimum overhang over the corners. Check for uniform fit in the car and adjust as needed.

2.7 Load the car with material. Make sure the loader is not dragging the sides of the wrapper down into the car. Heap the pile in the center from the sides and the ends. The pile should be recessed at each side and end forming a slope to the center but not above top edge of car.

2.8 Once the car is loaded, fold the end flaps into the car. Make sure there are no sharp objects protruding into to liner surface. Tie end flaps opposing with coils of rope attached.

Procedure for Installing Super Load Wrapper (Continued)

2.9 Remove the two end ropes from the surface of each end flap and temporarily place over the ends of the car. These are the final end tie ropes.

2.10 Fold the first flap, the side with short ropes attached, into the car and over the material. Make sure the flap crests the top of the heap and there are no sharp objects protruding into the liner surface.

2.11 Remove the 8 ropes, with bungee cords, that are taped to the inside of the second flap (opposite of the load side flap). Tie them to the 8 receiver holes of the first (loading end) flap by threading each through the receiver hole, looping the rope and rethreading the rope back through the receiving hole again, pulling snug, and tying the rope back to itself.

2.12 Untape the ends of the 23 cross (short) ropes affixed to the surface of the bottom flap and temporarily place over the car (load side)

2.13 Fold over the top flap (opposite of load side) and thread the 15 continuous cross ropes with bungee sections (out of 23) through the receiver hole in the hem, loop, and rethread the rope through the receiver holes, pull snug, and tie to the opposite (previously over the end of the car) cross rope's bitter end.

2.14 Tie the 8 intermittent ropes (placed temporarily over the end of the car; no bungee sections; no mating rope at the opposite side) through the receiver hold in the hem, loop, rethread through the receiver hole, pull snug, and tie the rope back to itself.

2.15 Tie each of the final end ropes (two on each end) to the most convenient of the four crossing ropes near each end of the rail car.