SUBJECT 5

Re: Pipe or Tubing, or Pipe or Tubing Fittings, metal

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Proponent: Freight Classification Development Council

Present Classification Provisions

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
51120	**Finned Pipe or Tubing,** in packages:	
Sub 1	Steel pipe or tubing with sheet metal fins	60
Sub 2	Brass, bronze or copper pipe or tubing with sheet metal fins	85
Sub 3	Metal, NOI, with sheet metal fins	100
51220	**Pipe,** iron or steel, covered or lined with:	
	Cement Mortar;	
	Composition, other than plastic;	
	Enamel;	
	Lead;	
	Plastic or Rubber, other than cellular, expanded or foam plastic or rubber, or sponge rubber;	
	Porcelain;	
	Tin;	
	Wood;	
Sub 1	In boxes or crates	50
Sub 2	Secured to lift truck skids or pallets, or in bundles	77.5
Sub 3	Loose	100
51280	**Pipe,** lead, plain or wire covered, in packages	60
51290	**Pipe,** sewer or drain, without couplings or fittings attached, or **Sewer or Drain Pipe Fittings,** see Note, item 51292, mineral and resin composition combined, see Note, item 51294, loose or in packages	77.5
51292	NOTE—Shipments of sewer or drain pipe fittings must be made in packages.	
51294	NOTE—Resin composition content of the pipe or fittings must not exceed 20 percent by weight.	
51320	**Pipe,** surface irrigation, steel, 24 gauge or thicker, not over 12 inches in diameter	85
51410	**Pipe Fittings,** magnesium or magnesium alloy, with or without covering or lining of brass, copper or steel, in boxes, crates or drums	100
51420	**Pipe Fittings,** NOI, see Note, item 51432:	
51432	NOTE—Will apply on gaskets or washers not in excess of the equipment for pipe fittings which they accompany.	
51450	Cupro-nickel or nickel-copper, plated or not plated, in boxes or drums	77.5
51540	Lead, in packages	60
51550	Nickel-plated, in boxes or drums	77.5
51560	Silver-plated, in boxes or drums	100

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Present Classification Provisions — Continued

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
51900	**Pipe or Tubing,** brass, bronze or copper, insulated or jacketed with cellular, expanded or foam plastic or rubber, combined or not combined with other materials, see Notes, items 51901 and 51902, in coils, in boxes	.175
51901	NOTE—Applies on insulated or jacketed pipe or tubing used in air conditioning, refrigeration or similar applications.	
51902	NOTE—Also applies on **Line Sets** consisting of two lengths of coiled brass, bronze or copper pipe or tubing, one or both lengths insulated or jacketed, with or without fittings, charged or not charged with nitrogen or refrigerant gas.	
51920	**Pipe or Tubing,** cupro-nickel, in boxes, crates or drums	60
52110	**Pipe or Tubing,** magnesium or magnesium alloy, with or without covering or lining of brass, copper or steel, in packages	92.5
52130	**Pipe or Tubing;** nickel or nickel-copper; or nickel-iron-chromium alloy, see Note, item 52132; in packages	85
52132	NOTE—Applies only on pipe or tubing made of nickel-iron-chromium alloy containing 50 percent or more of nonferrous metals.	
52135	**Pipe or Tubing,** nickel-silver, in boxes, crates or drums, or on reels	60
52175	**Pipe, Tubing, or Pipe or Tubing Fittings,** aluminum, combined or not combined with other materials, NOI, in packages:	
Sub 1	Greatest dimension exceeding 288 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 2	Less than 15	250
Sub 3	15 or greater	100
Sub 4	Greatest dimension exceeding 192 inches but not exceeding 288 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 5	Less than 15	200
Sub 6	15 or greater	92.5
Sub 7	Greatest dimension exceeding 96 inches but not exceeding 192 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 8	Less than 15	125
Sub 9	15 or greater	77.5
Sub 10	Greatest dimension not exceeding 96 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 11	Less than 15	110
Sub 12	15 or greater	65

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Present Classification Provisions — Concluded

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
52185	**Pipe, Tubing, or Pipe or Tubing Fittings,** brass, bronze or copper, combined or not combined with other materials, NOI, in packages:	
Sub 1	Greatest dimension exceeding 192 inches	100
Sub 2	Greatest dimension exceeding 96 inches but not exceeding 192 inches	85
Sub 3	Greatest dimension not exceeding 96 inches	70
52190	**Pipe, Tubing, or Pipe or Tubing Fittings,** iron or steel, combined or not combined with other materials, NOI, loose or in packages or Package 2130:	
Sub 1	Greatest dimension exceeding 288 inches	100
Sub 2	Greatest dimension exceeding 192 inches but not exceeding 288 inches	85
Sub 3	Greatest dimension exceeding 96 inches but not exceeding 192 inches	70
Sub 4	Greatest dimension not exceeding 96 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 5	Less than 30	70
Sub 6	30 or greater	50

Proposed Classification Provisions

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
51120	**Finned Pipe or Tubing,** etc	⇉Cancel; see item A-NEW
51220	**Pipe,** iron or steel, covered or lined with: **Cement Mortar;** **Composition,** other than plastic; **Enamel;** **Lead;** **Plastic or Rubber,** other than cellular, expanded or foam plastic or rubber, or sponge rubber; **Porcelain;** **Tin;** **Wood;** etc	⇉Cancel; see item A-NEW
51280	**Pipe,** lead, plain or wire covered, etc	⇉Cancel; see item A-NEW
51290	**Pipe,** sewer or drain, without couplings or fittings attached, or **Sewer or Drain Pipe Fittings,** etc	⇉Cancel; see item A-NEW
51292	NOTE—⇉Cancel; no further application.	
51294	NOTE—⇉Cancel; no further application.	

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Proposed Classification Provisions — Continued

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
51320	**Pipe,** surface irrigation, steel, etc	⇉Cancel; see item A-NEW
51410	**Pipe Fittings,** magnesium or magnesium alloy, etc	⇉Cancel; see item A-NEW
51420	**Pipe Fittings,** NOI, etc	⇉Cancel; see item A-NEW
51432	NOTE—⇉Cancel; no further application.	
51450	Cupro-nickel or nickel-copper, plated or not plated, etc	⇉Cancel; see item A-NEW
51540	Lead, etc	⇉Cancel; see item A-NEW
51550	Nickel-plated, etc	⇉Cancel; see item A-NEW
51560	Silver-plated, etc	⇉Cancel; see item A-NEW
51900	**Pipe or Tubing,** brass, bronze or copper, insulated or jacketed with cellular, expanded or foam plastic or rubber, etc	⇉Cancel; see item A-NEW
51901	NOTE—⇉Cancel; no further application.	
51902	NOTE—⇉Cancel; see item B-NEW.	
51920	**Pipe or Tubing,** cupro-nickel, etc	⇉Cancel; see item A-NEW
52110	**Pipe or Tubing,** magnesium or magnesium alloy, etc	⇉Cancel; see item A-NEW
52130	**Pipe or Tubing;** nickel or nickel-copper; or nickel-iron-chromium alloy, etc	⇉Cancel; see item A-NEW
52132	NOTE—⇉Cancel; no further application.	
52135	**Pipe or Tubing,** nickel-silver, etc	⇉Cancel; see item A-NEW
52175	**Pipe, Tubing, or Pipe or Tubing Fittings,** aluminum, etc	⇉Cancel; see item A-NEW
52185	**Pipe, Tubing, or Pipe or Tubing Fittings,** brass, bronze or copper, etc	⇉Cancel; see item A-NEW
52190	**Pipe, Tubing, or Pipe or Tubing Fittings,** iron or steel, etc	⇉Cancel; see item A-NEW

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Proposed Classification Provisions — Concluded

Item	Description	Class
	CONDUITS, OTHER THAN EARTHEN, GROUP: subject to item 50750	
⇉A-NEW	**Pipe, Tubing, or Pipe or Tubing Fittings,** metal, combined or not combined with other materials, NOI, see Note, item B-NEW, in packages or Package 2130:	
Sub 1	Greatest dimension exceeding 288 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 2	Less than 15	250
Sub 3	15 but less than 22.5	125
Sub 4	22.5 but less than 30	110
Sub 5	30 or greater	92.5
Sub 6	Greatest dimension exceeding 192 inches but not exceeding 288 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 7	Less than 15	175
Sub 8	15 but less than 22.5	100
Sub 9	22.5 but less than 30	92.5
Sub 10	30 or greater	77.5
Sub 11	Greatest dimension exceeding 96 inches but not exceeding 192 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 12	Less than 15	125
Sub 13	15 but less than 22.5	85
Sub 14	22.5 but less than 30	77.5
Sub 15	30 or greater	65
Sub 16	Greatest dimension not exceeding 96 inches, subject to Item 170 and having a density in pounds per cubic foot of:	
Sub 17	Less than 15	100
Sub 18	15 but less than 22.5	70
Sub 19	22.5 but less than 30	65
Sub 20	30 or greater	55
⇉B-NEW	NOTE—Also applies on **Line Sets** consisting of two lengths of coiled brass, bronze or copper pipe or tubing, one or both lengths insulated or jacketed, with or without fittings, charged or not charged with nitrogen or refrigerant gas.	

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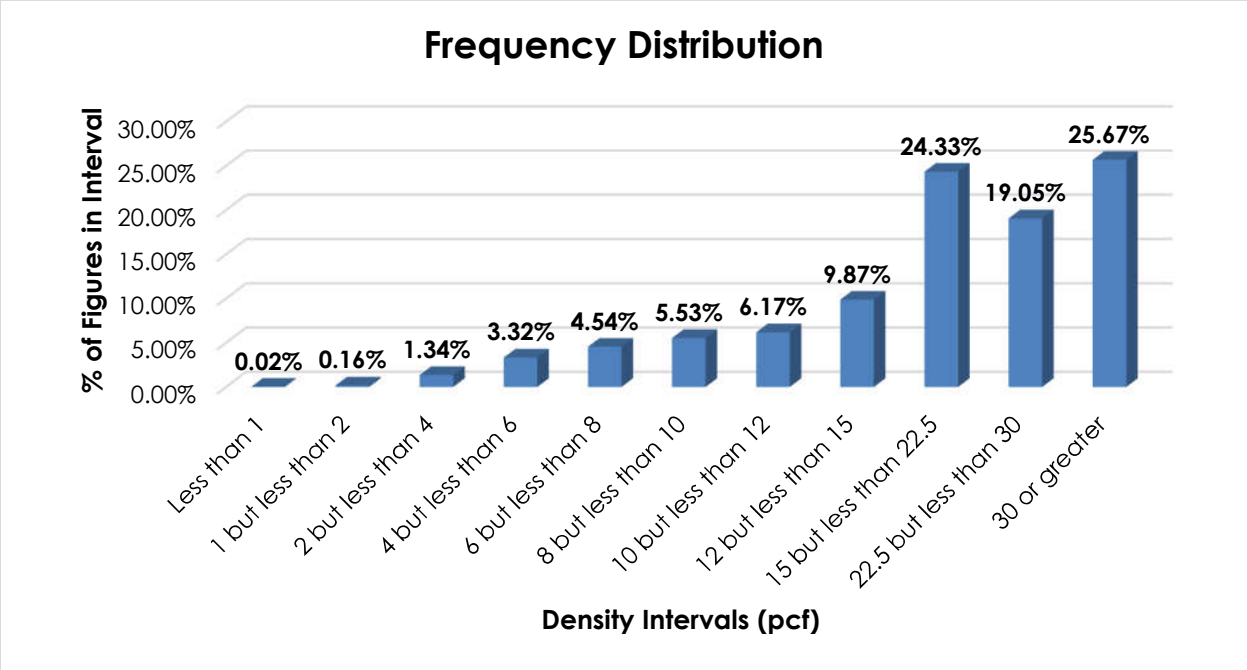
Analysis

Introduction

There are numerous items in the Conduits, Other than Earthen, Group that name particular types of metal pipe or tubing, or pipe or tubing fittings, and these provisions can be difficult to interpret, apply or verify. The transportation characteristics below relate to items 51120, 51220, 51280, 51290, 51320, 51410, 51420, 51450, 51540, 51550, 51560, 51900, 51920, 52110, 52130, 52135, 52175, 52185 and 52190, as shown in the Present Classification Provisions herein.

Transportation Characteristics

Density—The information of record includes 241,911 density observations obtained from the FCDC's Density Study[1]. The densities range from 0.42 to 85.35 pcf, with an overall average density of 24.09 pcf. As shown in the graph below, the density distribution is left-skewed, with just over 69% of the figures 15 pcf or greater.



When the data is evaluated based on the proposed density breaks at 15, 22.5 and 30 pcf, the density ranges and averages shown in the table on the following page emerge.

[1] The Density Study is part of an ongoing effort by the FCDC to collect information on actual shipments across all product categories handled by the LTL industry. Carriers that choose to participate in the Study periodically submit shipment data captured through their respective freight auditing programs. The FCDC uses verifiable data points, identified by NMFC item, that include the weight and the dimensions and/or cube of the shipping unit.

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Density Group (pcf)	Density Range (pcf)	Average Density (pcf)
Less than 15	0.42 – 14.99	9.82
15 but less than 22.5	15.00 – 22.49	18.63
22.5 but less than 30	22.50 – 29.99	26.04
30 or greater	30.00 – 85.35	45.04

Handling—Pipe, tubing and fittings vary greatly in size, with reported lengths[2] up to 324 inches (27 feet). As the length increases, the handling into and out of the vehicle becomes considerably more difficult, and certain equipment, or additional personnel, may be necessary to safely handle long shipments. Furthermore, as the length increases, cross-dock operations can be significantly affected. Often there is not enough room at carrier facilities to safely or easily handle and maneuver excessively long pipe or tubing.

When secured to a lift truck skid or pallet the freight may be handled more readily with mechanical equipment since there is clearance for the fork tines to get under and lift them. However, when the length exceeds 96 inches, even palletized shipments can be difficult to safely handle with mechanical equipment. The level of difficulty increases as the length of the article increases, even if fork extensions are available and used. Pipe or tubing tendered in bundles require extra care and attention during handling, as there is often no clearance under the bundle for fork tines.

Stowability—Fittings and shorter lengths of pipe or tubing may be tendered in boxes, often unitized on lift truck skids or pallets, while longer pieces may be tendered in boxes, bundles or crates. When tendered in boxes or crates the shipments generally provide a flat load-bearing surface.

Excessively long pipe or tubing tendered in boxes, bundles or crates may be difficult to stow with other general freight and will typically require floor loading. When floor loaded, it may be difficult to stow adjacent freight, and those tendered in bundles do not provide a flat load-bearing surface, which reduces or complicates the carrier's ability to load freight on top and maximize vehicle utilization. Depending on the length of the handling unit, the carrier will have to ensure that the freight will fit in the vehicle.

Liability—Pipe, tubing or fittings may damage other freight if not stowed properly within the vehicle and may be at risk for some damage from handling, particularly when the length exceeds 96 inches. In this regard, Note, item 50752, which is referenced by the generic heading, item 50750, provides specific packaging requirements for pipe, tubing and fittings having surfaces or ends liable to damage.

[2] While the proposed provisions are based on greatest dimension, the information of record shows that the largest dimension for most handling units of pipe or tubing is the length.

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Conclusion

Based on the foregoing analysis, items 51120, 51220, 51280, 51290, 51320, 51410, 51420, 51450, 51540, 51550, 51560, 51900, 51920, 52110, 52130, 52135, 52175, 52185 and 52190 would be canceled with reference to a new item, naming "Pipe, Tubing, or Pipe or Tubing Fittings, metal, combined or not combined with other materials, NOI." As proposed, the new item would have classes predicated on greatest dimension and density[3]. Due to the identified negative handling, stowability and liability characteristics, this proposal would assign classes higher than those called for under FCDC's density guidelines as greatest dimension increases. The table below shows the associated average densities for each density group and respective proposed classes based on greatest dimension.

Density Group (pcf)	Average Density (pcf)	Class When Greatest Dimension Does Not Exceed 96"	Class Adjustment When Greatest Dimension Exceeds 96" But Does Not Exceed 192"	Class Adjustment When Greatest Dimension Exceeds 192" But Does Not Exceed 288"	Class Adjustment When Greatest Dimension Exceeds 288"
Less than 15	9.82	100	125	175	250
15 but less than 22.5	18.63	70	85	100	125
22.5 but less than 30	26.04	65	77.5	92.5	110
30 or greater	45.04	55	65	77.5	92.5

Note, item 51902 would be canceled and reestablished as a new Note referenced by the new item. Notes, items 51292, 51294, 51432, 51901 and 52132 would be canceled with no further application.

[3] The density provisions would include reference to Item (Rule) 170, the inadvertence clause.

