

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

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1 APPROVAL REQUESTED OF: ☐ PRECEDENT
☒ TANK CAR COMMITTEE2 TYPE: ☒ CONSTRUCTION ☐ WELDED REPAIRS
☐ ALTERATION ☐ OTHER
☐ CONVERSION

3 AAR NO. A951010

4 DATE: 6-6-95

5 APPLICANT'S NO. 18-15743

7 TANK SPECIFICATION DOT111A100W1

8 STENCILED SPEC.: DOT111A100W1

10 NUMBER OF CARS 10 (3 Compt)

6 APPLICANT: ACF Industries, Inc.

3301 Rider Trail South, Earth City, MO 63045-1393

9 REPORTING MARKS & CAR NUMBERS MBLX 2700-2709

11	Initial commodity	See Notes	12	Density, lb. per gallon	6.84
13	Full water capacity, gal.	8,666 Per Compt.	14	Dome capacity or outage, gal.	2% = 173 Per Compt
15	Material type & grade - heads	ASTM A516 Gr. 70	16	Material type & grade - shell	ASTM A516 Gr. 70
17	Material thickness - heads, in.	7/16	18	Material thickness - shell, in.	7/16
19	Lining type	-----	20	Inside diameter - center, in.	110 1/4
21	Inside diameter - end rings, in.	110 1/4	22	Head radius, main. in. (if not 2:1)	----
23	Test pressure, psi	100	24	Insulation type	1 lb. Density Fiberglass
25	Insulation thickness, in.	4	26	Thermal conductivity, Btu-in/hr -ft ² -F	0.27
27	Type and number of safety relief devices	Valve (1)/Compt.	28	Safety device start-to-discharge, psi	75
29	Safety device flow capy., cfm reqd.	138 Per Compt	30	Safety device flow capacity, cfm, actual	1044 Per Compt.
31	Tank surface area, sq. ft.	619 Per Compt.	32	Underframe type	Stub Sill
33	Center of gravity, loaded, in.	85.6*	34	Est. light weight, lb.	88,700
35	AAR clearance diagram	C	36	Rail load limit, lb.	263,000
37	Truck capacity, tons	100	38	Head sheilds	

NOTES: * Spring Travel 3 11/16".

Lube oil and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car.

Date

Former Lading

The Following Drawings Apply:	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
General Arrangement.....	5-U-7976-A		
40 Arrangement, Tank.....	5-U-7531-A		
41 Reinforced Openings, Including Calculations..	4-U-7987-A		
42 Anchorage, Including Calculations.....	5-U-6264-A1		A941010
43 Fittings Arrangement.....	5-U-7970-A		
44 Manway Assembly.....	4-U-6898-B		A951013 (Pending)
45 Protective Housing.....	See Item 43		
46 Venting, Loading and Discharge Valves.....	See Item 43		
47 Safety Relief Devices.....ACF.....	1108		SRD911008
48 Heater Systems (Int. ___/Ext. X).....	5-U-7937-A		
49 Gaging Devices.....	Visual Gauge Bar		
50 Bottom Outlet Valve.....ACF.....	4" 2020		E921003
51 Repairs.....	5-U-4270-D		A951002A (Pending)
52 Manway cover.....	5-K-2329-E1		A931019C
53 BOV Mounting Flange.....	6-U-3729-B		

REVISIONS:

APPLICATION BY: C. E. Pierson

Date of Order 1-10-95

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE

TITLE

Product Engineer

APPROVAL - AAR Tank Car Committee

SEP 14 1995

Date Approved

P. J. Pague, Secretary

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

SEE ATTACHED SHEET

Name

Date 11/21/95

Title Manager, Technical Services

Certificate of Construction
Certificate No. F951010
Lot No. 18-15743

November 10, 1995
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<u>MBLX</u>	<u>Cap'y</u>	<u>Light- weight</u>
2700	26422	91100
2701	26406	91300
2702	26384	91300
2703	26355	91300
2704	26341	91400
2705	26277	91400
2706	26259	91000
2707	26371	90900
2708	26242	91000
2709	26270	90900



TANK CAR DETAIL SPECIFICATION

LOT. NO. 18-15743
AAR APPL. NO. 951010

ESTIMATE NO. 94-OEO-231

STATUS

ESTIMATE:

DATE

PRELIMINARY:

DATE

FINAL:

X

DATE 9-1-95 Rev. "A"

INQUIRY NO.: 94-NE-84-LP

CUSTOMER:

NUMBER & TYPE OF CAR: 10 -100 Ton, 26,000 gal., Shell Full, DOT 111A100W1, Exterior Coiled, Insulated, Stub Sill, Three Compartment, Slope Bottom Tank Cars.

GENERAL ARRGT. DWG.: 5-U-7976-A

MANWAY & FITTINGS ARRGT. DWG.: 5-U-7970-A

DATE OF ORDER: 01-10-95

PROJECT ENGINEER: J. L. Pellegrini

GENERAL INFORMATION

COMMODITY: Lube Oil

HAZARD CLASS: Flammable Liquid

NON-REGULATORY:

REGULATORY: X

MAX. WEIGHT: 6.84

LBS/GAL

COMMODITY STENCIL: None

INSPECTION: ACF

HEATER SYSTEM: 12 lines - 8" C.S. exterior half oval simplex system, with one inlet and one outlet, without relief valves, for each compartment. DWG.: 5-U-7937-A

INSULATION: 4" - 1 lb./cu. ft. nom. density fiberglass.

JACKET: 11 ga., C.S., 2 Pc. shell and three pc. hd. with recesses for side. ladder

ENDS DWG.: 5-U-3788-00-01-D

CTR. DWG.: 5-U-7914-A

HEAT TREATMENT: 1100 deg. F min. at least one hour.

X-RAY: In accordance with AAR Appendix "W".

TANK LINING: None

CLEANING TANK INTERIOR: Light Grit Blast, Sweep clean - Brushoff

PAINT PREPARATION: Gritblast completed car exterior - Commercial.

PAINTING & LETTERING: ACF std black alkyd with AAR and Dot Stenciling. No principal lettering. Apply Chemtrec decals to the cars and reporting marks and car numbers to the top of car "B" end - 9" letters and numbers. DWG.: 5-U-8011-A

APPLICATION DWG.: 4 Card Holders

DWG.: 5-U-2946-02-D

REPORTING MARKS & CAR NOS.: MBLX 2700-2709.

AAR CLEARANCE DIAGRAM: Plate "C"

OVER-ALL CAR HEIGHT: 15'-0 5/32" Approx. TANK MOUNTING HT.: None EXTREME WD.: 10'-7"

CENTER OF GRAVITY: 85.6" LIGHT WEIGHT: ESTIMATED: 88,700 lbs. ACTUAL:

REMARKS: Riveted or bolted connections to have faying surfaces painted prior to assembly Maximum lading weight of 6.84 lb/gal. based on 25,480 gal. lading and rail load limit of 263,000 lbs. Wipe down interior of car with mineral oil.

TANK

CLASSIFICATION: DOT 111A100W1

TANK DWG.: 5-U-7531-A

SHELL FULL CAPACITY: EST.: 26,000 Gal. (8666 Gal/compt)

ACTUAL:

TEST PRESSURE: 100 psi

COIL TEST PRESSURE: 200 psi

TANK PLATE MATERIAL: ASTM A516 Gr. 70 throughout.

INSIDE DIAMETER: 110 1/4" (1/4"/ft. slope to center of car)



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AAR APPL. NO. 951010

ESTIMATE NO. 94-OEO-231

LENGTH OVER HEADS: 58'-6 1/16"
C. TO C. HEAD WELDS: 53'-1 1/4" top/53'-5 7/8" bottom
NOZZLE I.D.: 20" NOZZLE HEIGHTS:
SHELL DESIGN: 7/16" thick
HEAD DESIGN: 2:1 ELLIPSOIDAL, 7/16" thick DIE ASSY. DWG.:
NOZZLE REINFORCEMENT: ASTM A516 Gr. 70 CALC. DWG.: 5-U-7987-A
WELD ATTACHMENTS: Continuous full width cradle pad (36" wide) DWG.: 5-U-7918-A
TANK FIT ARRGT.: DWG.: 5-U-8190-B
REMARKS: Estimated lading capacity is 25,480 gal. Estimated shell full capacity,
including 2% outage of 520 gal., (173 gal/compt) is 26,000 gal. (8666 gal./compt.)
Gauge table required - innage/outage.

FITTINGS PER COMPARTMENT

MANWAY ARRGT. DWG.: 4-U-6898-01-B	OUTLET ARRGT. DWG.: 5-U-4270-02-B
MANWAY RING: 20" I.D. ASTM A516 Gr. 70	DWG.: 3-U-1748-C
MANWAY COVER: Cast steel, Gr. B, 6-bolt	DWG.: 5-U-5231-A
SAFETY VALVE: 75# ACF 1108 with Buna-N "o"-rings	DWG.: 4-U-1121-3-B
BOTTOM OUTLET VALVE: ACF 4" steam jacketed low profile C.S. ball valve, Model 2020, applied to a C.S. mtg. flange.	DWG.: 5-U-4270-2-B
CHAMBER: C.S., N.J., chamber with 4" M.I. cap and 2" M.I. plug.	DWG.: 3-J-8459-00-C
SUMP: None	
SIPHON: None	
AIR INLET: None	
VACUUM RELIEF VALVE: ACF S-1624 with Buna-N o-rings, mounted on manway cover.	DWG.: 3-F-4216-6
OUTAGE DEVICE: C.S. marker, visible thru open manway. Indicates liquid level at 2% outage.	DWG.:
THERMOMETER WELL: None	DWG.:
TEST TUBE: None	DWG.:
TELLTALE DEVICE: None	DWG.:
REMARKS: Gasket material to be JM-978, NBR (Buna-N) or equal.	

MOUNTINGS

TANK CRADLE PADS: None
TANK BANDS OR HOLDDOWN RODS: None
SAFETY PLATFORM: ACF 2-level with side ladders offset 24" from center of car.
SIDE HANDRAIL APPLN.:
REMARKS: Anti-skid coating applied to jacket surface within platform area.

DWG.: 5-U-7960-A
DWG.: 5-U-7936-B



TANK CAR DETAIL SPECIFICATION

LOT. NO. 18-15743
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ESTIMATE NO. 94-OEO-231

UNDERFRAME

TYPE: ACF Stub Sill (5'-5 1/8" overhang). DWG.: 5-U-3391-02-B
LENGTH OVER STRIKERS: 61'-8 7/8" WIDTH OVER END BDS.: 10'-0"
TRUCK CENTERS: 50'-10 5/8" COUPLER HEIGHTS: 2'-10 1/2"
CENTER SILL: 2-12 15/16" @ 41.2 lb. CZ13 sections, continuously welded ASTM A-572 Gr. 50
Type 2 modified to 70 ksi min. tensile. DWG.: 4-K-6144-B
ANCHORAGE CALCULATION: DWG.: 5-U-6264-A
STRIKER: Steel weldment. DWG.: 4-K-3660-01-C
DRAFT GEAR: AAR M-901E CW Mark LR DFT. GEAR ARRG. DWG.: 5-U-3140-B
COUPLER: AAR SE60DE. Apply Holland coupled carrier wear eliminators #WE-4002.
COUPLER YOKE: AAR SY40AE
UNCOUPLING DEVICE: ACF DWG.: 3-U-0792-A
AIR BRAKE: WABCO TMX Truck Mounted Brakes END DWG.: 5-U-6141-A
CTR DWG.: 5-U-7931-B
BRAKE REGULATOR: AAR Group E
BODY BRAKE LEVERS: ACF
HAND BRAKE: AAR 1993 vertical wheel with 66 bellcrank DWG.: 4-U-6143-C
BODY BOLSTER: 120 deg. single 1/2" web weldment & 3/4" bottom cover.
DWG.: 5-U-7884-00-01
END ARRG. - "A" END: DWG.: 5-U-3157-02-D
END ARRG. - "B" END: DWG.: 5-U-3158-02-F
END RUNNING BOARDS: End boards only. Galvanized. DWG.: 3-U-0791-C
BODY CENTER PLATE: 16" dia. low profile center plates. DWG.: 3-U-3150-B
REMARKS: Lifting provision at body bolsters. Apply Holland coupler carrier wear
eliminators #WE-4002.

TRUCKS

TYPE: 100 ton with Ride Control, 5'-10" wheel base and 3 11/16" spring travel. DWG.: 5-U-8087-00-01-A
WHEEL TYPE: 36" dia. one-wear, H-36 or CH-36 Class C
AXLE: 6 1/2" x 12" SPECS.: AAR M-101 TYPE: AAR std. Class "F" roller bearing.
JOURNAL BEARINGS: Roller type.
SIDE FRAMES: Cast steel Grade "B", narrow jaw pedestal.
BOLSTERS: Cast steel Grade "B". Provide Holland # WE-1016-1 horizontal wearliner without
rivets (net of lube chips).
SIDE BEARINGS: Friction type.
SPRING GROUPING: 9 outer and 6 inner coils per nest (D-5).
BRAKE BEAM: AAR No. 24. Apply Holland # WE-5505 brake beam guide wear eliminator.
BRAKE SHOE: AAR H4 KEY: Lockey DWG.:
TRUCK LEVERS: WABCO TMX Truck Mounted Brakes DEAD LEVER DWG.:
LIVE LEVER DWG.:
BOTTOM CONNECTION: WABCO TMX Truck Mounted Brake System DWG.:
REMARKS:

MINIMUM CURVE CHARACTERISTICS:

- | | |
|---|---------|
| A) ON CURVE & UNCOUPLED: (9° TRUCK SWING) | 163 FT. |
| B) COUPLED TO LIKE CAR - ONE ON CURVE & ONE ON TANGENT: | 239 FT. |
| C) COUPLED TO AAR 40' BASE CAR W/TANK CAR ON CURVE & BASE CAR ON TANGENT: | 236 FT. |