APPLICATION FOR APPROVAL OF VALVES, CLOSURES, AND FITTINGS

Applicant A. STUCKI AAR No. E262106
Description of Device Blind Flange 6" Assembly W/ Plug

Applicant No. _____ Device Ident. No. TCBFNM100A Date 07/30/2026

1. Manufacturer A. STUCKI
2. Address 1385 101st Street, Suite A, Lemont, IL 60439 City Lemont State IL Zip 60439
3. Test facility if other than the manufacturer _____ Address _____
4. Test date 07/24/2026 4. Observer Marc Wiktor
   Title: Product Development Engineer

TEST PROCEDURE

5. Description of prototype testing: Testing per AAR MSRP M-1002, Appendix A, Section. 2.2.5

6. Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	ambient °F _____ °C	165 psi _____ kPa	1X10 min.	ambient °F _____ °C	165 psi _____ kPa	water	
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	-30 °F _____ °C	165 psi _____ kPa	1X10 min.	-30 °F _____ °C	165 psi _____ kPa	water	
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	150 °F _____ °C	165 psi _____ kPa	1X10 min.	150 °F _____ °C	165 psi _____ kPa	water	

7. Commodity: Regulated Commodity X Non Regulated Commodity ___ Specific Commodity _____
8. Flow rate (if applicable) _____ gpm (_____ L/min)

Applicable drawings	Material	Drawing Number latest revision	Precedent	
			Drawing Number	Application/Certificate
9. Device application				
10. Device assembly				
11. Device details				

12. Quality Control Statement _____

REVISIONS:

CERTIFICATION: The above data is correct and conforms with AAR Specifications for Tank Cars, Appendix A. The devices tested conform with drawings listed above.

By Vedran Dzolovic Title Manager, Product Development

APPROVAL AAR Tank Car Committee Service Trial Required

Date Approved for Service Trial _____

Service Trial Number _____

_____
(Signature) on behalf of Tank Car Committee

APPROVAL AAR Tank Car Committee Service Completed / Not Required

Date Service Trial Completed n/a Date AAR Received Form AAR 4-6 _____.

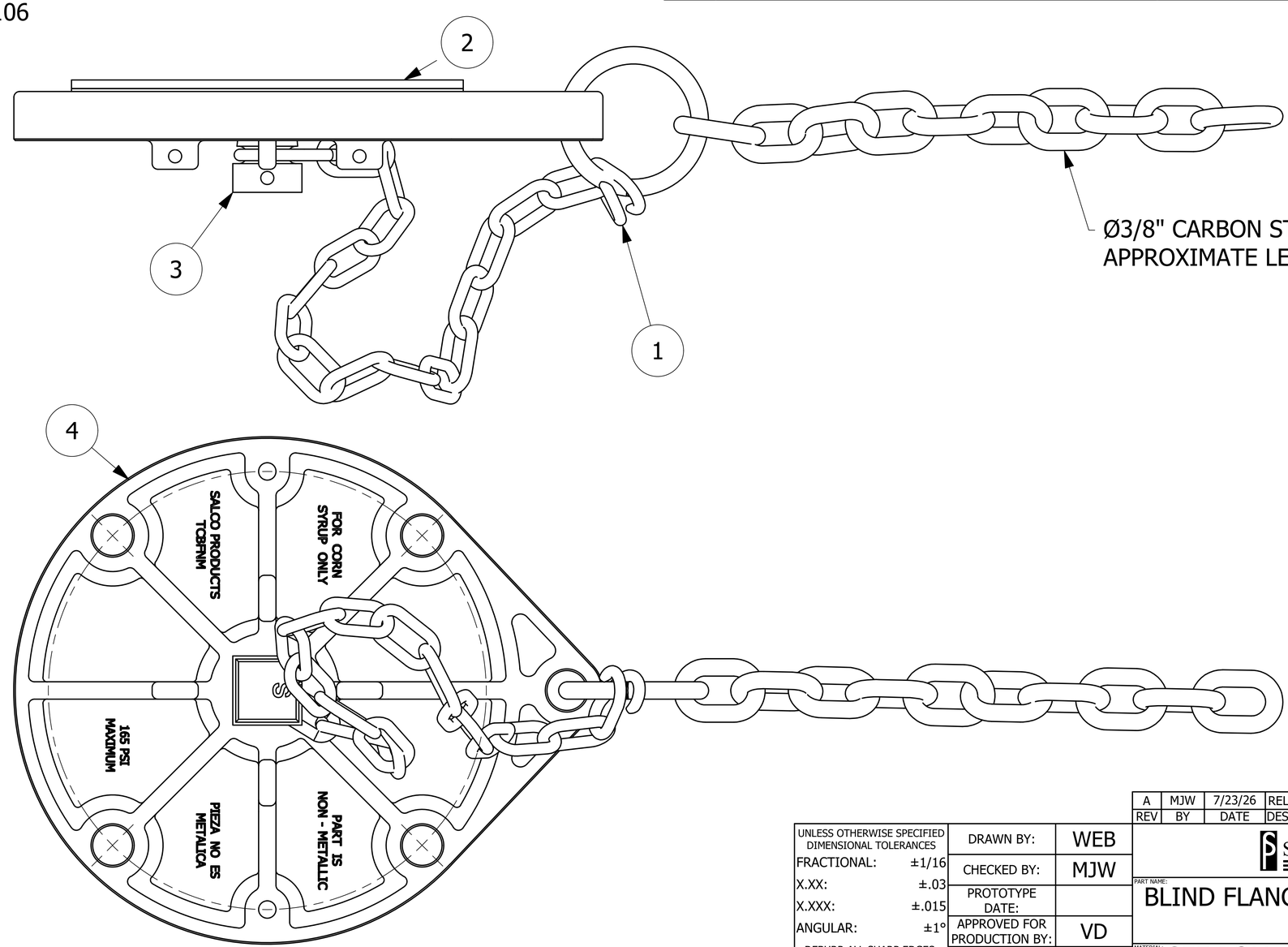
Date Approved 9/22/2026

Expiration Date _____

_____
(Signature) on behalf of Tank Car Committee

NOTES:
1. THIS ASSEMBLY INCLUDES A NON-METALLIC BLIND FLANGE.
2. THIS ASSEMBLY IS INTENDED FOR CORN SYRUP SERVICE ONLY.
3. INSTALL NPT PLUG USING PTFE TAPE OR APPROVED THREAD SEALANT.
   HAND TIGHTEN, THEN TIGHTEN APPROXIMATELY 1-1/2 ADDITIONAL TURNS.
   DO NOT EXCEED 40 FT-LBS TORQUE.
4. AAR APPROVAL #: E262106

NO.	PART NAME	PART#	REQ'D	MATERIAL
1	REPAIR LINK 1/4"	SCA1L	1	CS Z/P
2	6" CORN SYRUP BLIND FLANGE GASKET	TC100BFG2	1	FDA WHITE NITRILE
3	PLUG ASSEMBLY 1"	TC1NYP4A	1	NYLON/SS
4	BLIND FLANGE 6" ASSEMBLY	TCBFNMA	1	GRIVORY GV-5H/SS/CS Z/P



REV	BY	DATE	DESCRIPTION
A	MJW	7/23/26	RELEASED FOR PRODUCTION

UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCES
FRACTIONAL: ±1/16
X.XX: ±.03
X.XXX: ±.015
ANGULAR: ±1°
DEBURR ALL SHARP EDGES. ALL MACHINED SURFACES TO HAVE A 125 RMS FINISH UNLESS NOTED OTHERWISE.
THIRD ANGLE PROJECTION

DRAWN BY:	WEB
CHECKED BY:	MJW
PROTOTYPE DATE:	
APPROVED FOR PRODUCTION BY:	VD
PRODUCTION DATE:	7/23/2026
SIZE:	D
DRAWING #:	54119

SALCO PRODUCTS, INC.

PART NAME: BLIND FLANGE 6" ASSEMBLY W/ PLUG

MATERIAL: SEE BOM

PROJECT #: R231116 | SHEET #: 1 OF 1 | SCALE: 3:4

PART #: TCBFNM100A

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6 INCH NON-METALLIC BLIND FLANGE
P/N TCBFNM100A
TEST REPORT

07/24/2026

Background:

A. Stucki Company has designed a non-metallic blind flange to serve customers' needs of a flange in nonflammable corn syrup service that has little to no scrap value compared to the current A. Stucki aluminum blind flange offering. The flange in both cases is considered a "*secondary closure*" as it is downstream of the bottom outlet valve.

The nonmetallic blind flange is injection molded out of Grivory GV-5 FWA polyamide. This is the same material used on A. Stucki's plastic belly cap (reference P/N PBC400_A, AAR approval #E202138). Grivory GV-5 FWA combines tensile and impact strength while being approved for FDA and NSF 61 for direct, repeated food and cold water contact.

Below table documents the mechanical properties of Grivory GV-5 material as compared against aluminum:

Grivory GV-5 FWA vs ASTM B26 356.0 T6 Aluminum Mechanical Properties			
Properties	**Unit**	**Grivory GV-5 FWA**	**ASTM B26 356.0 T6**
Tensile Strength	KSI	31.9	30.0
Tensile E-Modulus	KSI	2,400.0	10,000.0
Shear Modulus	KSI	912.0	3,800.0
Density	lb/in^3	.0564	.0975
Heat Deflection Temperature HDT/A @1.80MPA	°C	235	-
Max Working Temp (Short Term)	°C	220	-
Max Working Temp (Long Term)	°C	100-120	-

Overview of Testing: (Internally completed by A. Stucki)

1) A blind flange was hydrostatically pressure tested to 165 $^{+10}_{-0}$ PSI for a minimum of 10 minutes. 1 flange was retested at 150°F and -30°F. This test was completed with no signs of leaking or failure.

2) A Nylon 1" plug (A. Stucki P/N TC1NYP) was threaded into a flange using PTFE tape and pressure tested for leaks. The plug was removed and reinstalled with new tape for a total of 120 cycles, simulating five years of service (two uses per month over 60 months). After every 12 cycles, a hydrostatic pressure test was performed at 70 $^{+10}_{-0}$ PSI to evaluate thread integrity. This test was completed with no failures or damage.

3) An impact wrench was used to tighten bolts onto the flange to evaluate damage caused by over-torquing. The test was repeated 10 times on a single flange, with the wrench running for 10 seconds each time to simulate worst-case scenarios. This test was completed with no excessive signs of damage.

4) A flange was bolted to a test fixture using ¾" heavy hex fasteners and an impact wrench. Two bolts used washers, while two did not. One nut without a washer was torqued and loosened 120 times to simulate five years of service (two uses per month over 60 months). After every 12 cycles, a hydrostatic pressure test was conducted at 70 $^{+10}_{-0}$ PSI to assess the flange's sealing capability under repeated stress. This test was completed with no signs of leaking or failure.

5) A 5 lb weight with a rounded nose was dropped from a height of 4 feet to simulate a tool falling onto the flange. This test evaluated the toughness of the Nylon material. This test was repeated at 150°F and -30°F. This test was completed with no signs of cracks or failures.

6) Flanges were dropped from a height of 15 feet onto a concrete floor to assess the durability of the Grivory material. While not representative of typical service conditions, this test highlights the material's resilience. This test was completed with no issues.

7) A 1-inch nylon plug (A. Stucki P/N TC1NYP) was installed into a blind flange using one wrap of PTFE thread seal tape and tightened to 25 ft-lb. The plug was then removed and inspected for damage. This process was repeated, increasing the torque in 10–15 ft-lb increments until failure occurred. The plug failed at the thinnest cross-section at a torque of 102 ft-lb.

Performed By

Marc J. Wiktor

Marc Wiktor
Product Development Engineer

Witnessed By

Vedran Dzolovic

Vedran Dzolovic
Manager of Product Development

Testing Documentation:

165.7 PSI Hydrostatic Pressure Test @ Ambient Temperature

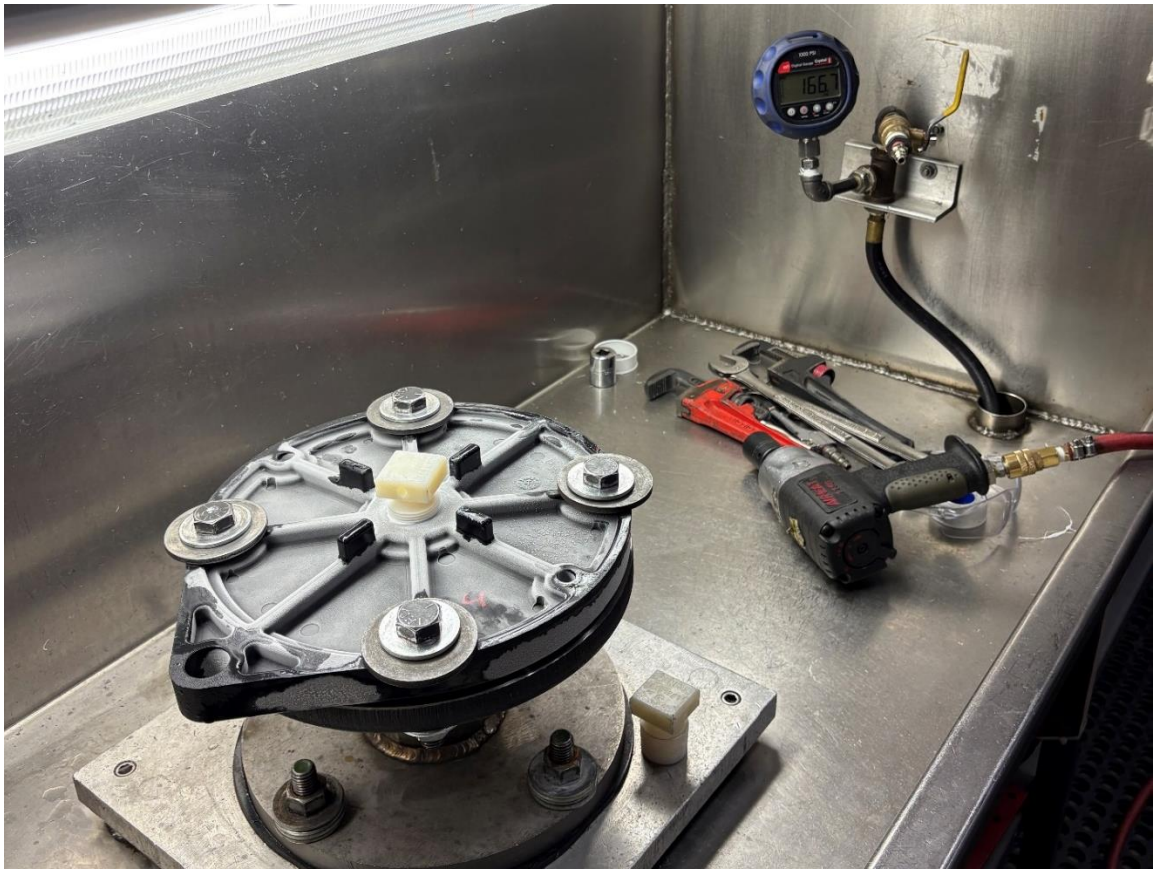


167.8 PSI Hydrostatic Pressure Test @ +153.8°F



166.7 PSI Hydrostatic Pressure Test @ -30.2°F



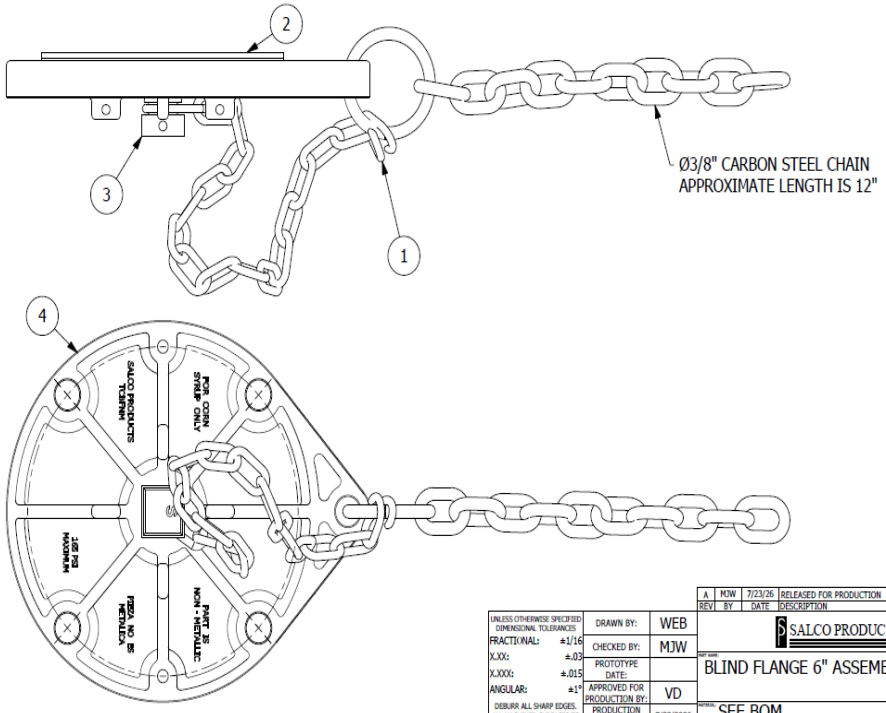


Stucki Engineering Assembly Prints:

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BLIND FLANGE 6”

