

# Certificate of Compliance

## Birmingham Fastener Manufacturing

931 Ave W  
Birmingham, Alabama 35202  
(205) 595-3511

### Item Description

Description 3/4"-10 T-Head Bolts

Specification ANSI/AWWA C111/A21.11-00 Finish Plain

### Raw Material Analysis

Grade ASTM A242 Modified

Yield Strength 45,000 psi Minimum Elongation in 2" 20% Minimum

C 0.20 max Mn 1.25 max S 0.005 max Ni 0.25 min Cu 0.20 min

Combined (Ni + Cu + Cr) 1.25 min

### Mechanical Properties

Proof Load 13,500 lbf minimum - 10 seconds minimum

Deformation 0.002/unit length maximum

PROOF LOAD BASED ON 45,000 PSI

This information represents the minimum requirements of the described material. The referenced product will be in full compliance with ANSI/AWWA C111/A21.11-00 specification. The referenced products is produced in the USA from material that is melted and manufactured in the USA. The product will comply with the requirements of the American Iron and Steel Act.

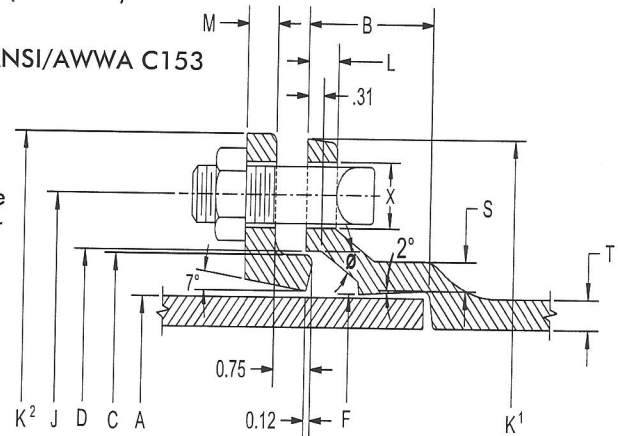
Authorized Signature Shawn Brasher DATE 3/16/2017

Shawn Brasher, Sales

# SUBMITTAL

(Current revisions for all Standards apply)

- SIZES:** ..... 2" through 48" (2" Not Referenced in C153/A21.53)
- STANDARDS:** ..... ANSI/AWWA C153/A21.53-06 and NFPA 3"-16" UL Listed (EX2111)  
**Note:** Cast with tested and traceable ASTM A536 Ductile Iron
- PRESSURE RATING:** ..... 2" - 24" rated @ 350 psi; 30" - 48" & all fittings with Flanged branches rated @ 250 psi  
**Note:** With use of special flange gasket 2" - 24" flanged fittings can be rated @ 350 psi  
For 350 psi flange joint applications, we recommend the use of annular ring type gasket or comparable.  
**Note:** Compact Wyes over 12" are not pressure rated. Contact manufacturer for rating in your application.
- DEFLECTION:** ..... Fittings 2" - 12" \*5° maximum deflection & 14" - 48" \*3° maximum deflection  
**Note:** If pipe O.D. & fitting I.D. at nominal, achievable deflection is ~50% of maximum
- NSF-61:** ..... Meets all requirements, UL Listed (MH16439)
- ASPHALTIC COATING:** ..... ANSI/AWWA C104/A21.4-08 - ANSI/AWWA C153
- CEMENT LINING:** ..... ANSI/AWWA C104.A21.4-08, Double cement lining available
- EPOXY COATING:** ..... ANSI/AWWA C116/A21.16-09  
**Note:** Fittings are available to the specification(s) required for your application(s)
- BARE:** ..... Available
- BOLTS:** ..... ANSI/AWWA C111/A21.11-7
- INSTALLATION:** ..... Per AWWA C600-10 using pipe conforming to ANSI/AWWA C151/A21.51-02 or C900-C905



JOINT DIMENSIONS IN INCHES

BOLTS

| Size | A Dia. | B    | C Dia. | D Dia. | F Dia. | J Dia. | K' Dia. | K² Dia. | L    | M    | S    | T   | X     | Size        | No. |
|------|--------|------|--------|--------|--------|--------|---------|---------|------|------|------|-----|-------|-------------|-----|
| 3    | 3.96   | 2.50 | 4.84   | 4.94   | 4.06   | 6.19   | 7.62    | 7.69    | .58  | .62  | .39  | .33 | 3/4   | 5/8x3       | 4   |
| 4    | 4.80   | 2.50 | 5.92   | 6.02   | 4.90   | 7.50   | 9.06    | 9.12    | .60  | .75  | .39  | .34 | 7/8   | 3/4x3 1/2   | 4   |
| 6    | 6.90   | 2.50 | 8.02   | 8.12   | 7.00   | 9.50   | 11.06   | 11.12   | .63  | .88  | .43  | .36 | 7/8   | 3/4x3 1/2   | 6   |
| 8    | 9.05   | 2.50 | 10.17  | 10.27  | 9.15   | 11.75  | 13.31   | 13.37   | .66  | 1.00 | .45  | .38 | 7/8   | 3/4x4       | 6   |
| 10   | 11.10  | 2.50 | 12.22  | 12.34  | 11.20  | 14.00  | 15.62   | 15.62   | .70  | 1.00 | .47  | .40 | 7/8   | 3/4x4       | 8   |
| 12   | 13.20  | 2.50 | 14.32  | 14.44  | 13.30  | 16.25  | 17.88   | 17.88   | .73  | 1.00 | .49  | .42 | 7/8   | 3/4x4       | 8   |
| 14   | 15.30  | 3.50 | 16.40  | 16.54  | 15.44  | 18.75  | 20.31   | 20.25   | .79  | 1.25 | .55  | .47 | 7/8   | 3/4x4 1/2   | 10  |
| 16   | 17.40  | 3.50 | 18.50  | 18.64  | 17.54  | 21.00  | 22.56   | 22.50   | .85  | 1.31 | .58  | .50 | 7/8   | 3/4x4 1/2   | 12  |
| 18   | 19.50  | 3.50 | 20.60  | 20.74  | 19.64  | 23.25  | 24.83   | 24.75   | 1.00 | 1.38 | .68  | .54 | 7/8   | 3/4x4 1/2   | 12  |
| 20   | 21.60  | 3.50 | 22.70  | 22.84  | 21.74  | 25.50  | 27.08   | 27.00   | 1.02 | 1.44 | .69  | .57 | 7/8   | 3/4x4 1/2   | 14  |
| 24   | 25.80  | 3.50 | 26.90  | 27.04  | 25.94  | 30.00  | 31.58   | 31.50   | 1.02 | 1.56 | .75  | .61 | 7/8   | 3/4x5       | 16  |
| 30   | 32.00  | 4.00 | 33.29  | 33.46  | 32.17  | 36.88  | 39.12   | 39.12   | 1.31 | 2.00 | .82  | .66 | 1 1/8 | 1x6         | 20  |
| 36   | 38.30  | 4.00 | 39.59  | 39.76  | 38.47  | 43.75  | 46.00   | 46.00   | 1.45 | 2.00 | 1.00 | .74 | 1 1/8 | 1x6         | 24  |
| 42   | 44.50  | 4.00 | 45.79  | 45.96  | 44.67  | 50.62  | 53.12   | 53.12   | 1.45 | 2.00 | 1.25 | .82 | 1 3/8 | 1 1/4x6 1/2 | 28  |
| 48   | 50.80  | 4.00 | 52.09  | 52.26  | 50.97  | 57.50  | 60.00   | 60.00   | 1.45 | 2.00 | 1.35 | .90 | 1 3/8 | 1 1/4x6 1/2 | 32  |

# CHAMPION SALES & MANUFACTURING, INC.

## STANDARD MECHANICAL JOINT and \*TRANSITION GASKETS:

### ANSI/AWWA C111/A21.11-12

Gasket dimensions conform to the drawings set forth under above noted standard. Markings include size, mold number, gasket manufacturer's mark (*champion*), country where molded, and product identification letters. Markings are not on the sealing surface.

Gasket material is vulcanized **SBR**. This compound is not the standard material and has been requested by the purchaser. Gaskets are free of foreign materials, porous areas, or other defects that make them unfit for the intended use.

Gaskets are manufactured under quality control standards maintained by the manufacturer and raw materials manufacturers. Appropriate documentation is maintained by the manufacturer.

Properties of the SBR rubber and test methods are:

| Property                                | ASTM Test Method  | Required Value   |
|---|-------------------|------------------|
| Hardness, Shore "A"                     | D2240-86          | 75 (+-5)         |
| Minimum Tensile                         | D412-87           | 1500 psi (10MPa) |
| Minimum Elongation                      | D412-87           | 150 %            |
| Minimum Aging                           | D572-88           | 60 %             |
| Maximum Compression Set                 | D395-89, Method B | 20 %             |
| Resistance to surface<br>ozone cracking | D1149-86          | No cracking      |

<sup>1</sup>Champion maintains a quality assurance program and manual that is reviewed and updated on an ongoing basis to ensure product quality. We require our vendors to maintain quality assurance programs and submit lab testing documentation with each shipment. In addition, Champion does in house testing and submits to random testing by Underwriters Laboratories, Inc. We are recognized under the component program of Underwriters Laboratories, Inc. ANSI/NSE Standard 61 upon request.

**All of our products are manufactured in the USA and are marked in accordance with above noted standards.**

\*Transition gasket standards are not addressed under the ANSI/AWWA C111/A21.11-00. Transition gaskets manufactured by Champion follow the guidelines and standards for Standard Mechanical Joint Gaskets.

MADE IN USA

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