City of Aurora
Building Codes Division
15151 E Alameda Pkwy
Aurora, CO 80012
(303) 739-7420

Notice

This material is subject to copyright protection pursuant to Federal Law: 17 United States Code Section 106.

Building Permit Application

Permit Center - 15151 E Alameda Pkwy ❖ Ste 2400 ❖ Aurora, CO 80012 ❖ (303)739-7420
Email build.plans@auroragov.org

Project Address: 1501 S. Potomac St. Aurora Unit # Zip code: 80012
Project Name: Medical Center of Aurora - ER/TRAUMA Renovation
Contractor Company Name: Empire Fire & Safety Phone: (303)451-0975 Fax: 3) 920-9298
Contact Person: Dave Walker Phone: (303) 217-1438

Online Services now offers email updates of correction items found during plan review as well as email updates for all inspections during the construction phase of your project. If you are interested in receiving these emails please provide your email address. NOTE: Set your emails filter to accept emails from "AmandaSystem"

Plan Corrections: Email: empirefiresafety@msn.com
Inspection Corrections: Email: " " "

Architect and/or Engineer Contact information for correction items:

Architect or Engineer Name: CS Design Email:
Phone #: Fax #:
Owner:(Required for Certificate of Occupancy) only:
Owner address:
Email:

Valuation / FDA$ 5900.00 **Materials cost $** 2700.00

FDA = Fee Determination Assessment (Also known as the value of project) has no relationship to the construction costs for the building which can vary greatly. Rather, the Assessment is used only to determine the appropriate level of fees to fund our code compliance activities

Describe the work you will be doing: Relocating sprinklers to accomodate new ceiling grid. Changing sprinklers from semi-recessed to concealed.

I declare under penalty that this application has been examined by me, and that the statements made herein are made in good faith pursuant to City of Aurora tax and licensing regulations; and to the best of my knowledge and belief are true, correct and complete.

Print Name: Dave Walker **Signature:** Dave Walker **Date:** 5/31/12

BOARD OF APPEALS - Contractor's Appeals and Standards Board Applicants have the right to have the board hear appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of the building code. Any application for appeal to the board shall be based on a claim that the true intent of the code or the rules legally adopted there under have been incorrectly interpreted, the provisions of the building code do not fully apply or an equally good or better form of construction is proposed.

Sprinkler & Alarm permits are separate submittals, and the value is NOT included on main permit.

◆◆◆◆ THIS SPACE FOR OFFICE USE ONLY ◆◆◆◆

Change of occupancy/use: ☐ Yes ☐ No

FDA: _____

Reviews	Inspections
☒ Structural	☐ Structural
☐ Mechanical	☐ Mechanical
☐ Plumbing	☐ Plumbing
☐ Electrical	☐ Electrical
☒ Fire Life Safety	☒ Life Safety
☐ Bldg Life Safety	☐ Gate/Haz

Intake Date 5/31/12 PE Initial _____
Balance Due: $ _____

Pre-approval(s): Zoning ☐ Water ☐ Initials _____

Exterior changes? ☐ Yes ☐ No
Homeowner Verified ☐ Yes
Permit Type Limited
Mid roof /Avg bldg height
Parent Permit RSN
Plans Examiner JP
Sub Type 4X Sprinkler
RSN: 659638 12600702

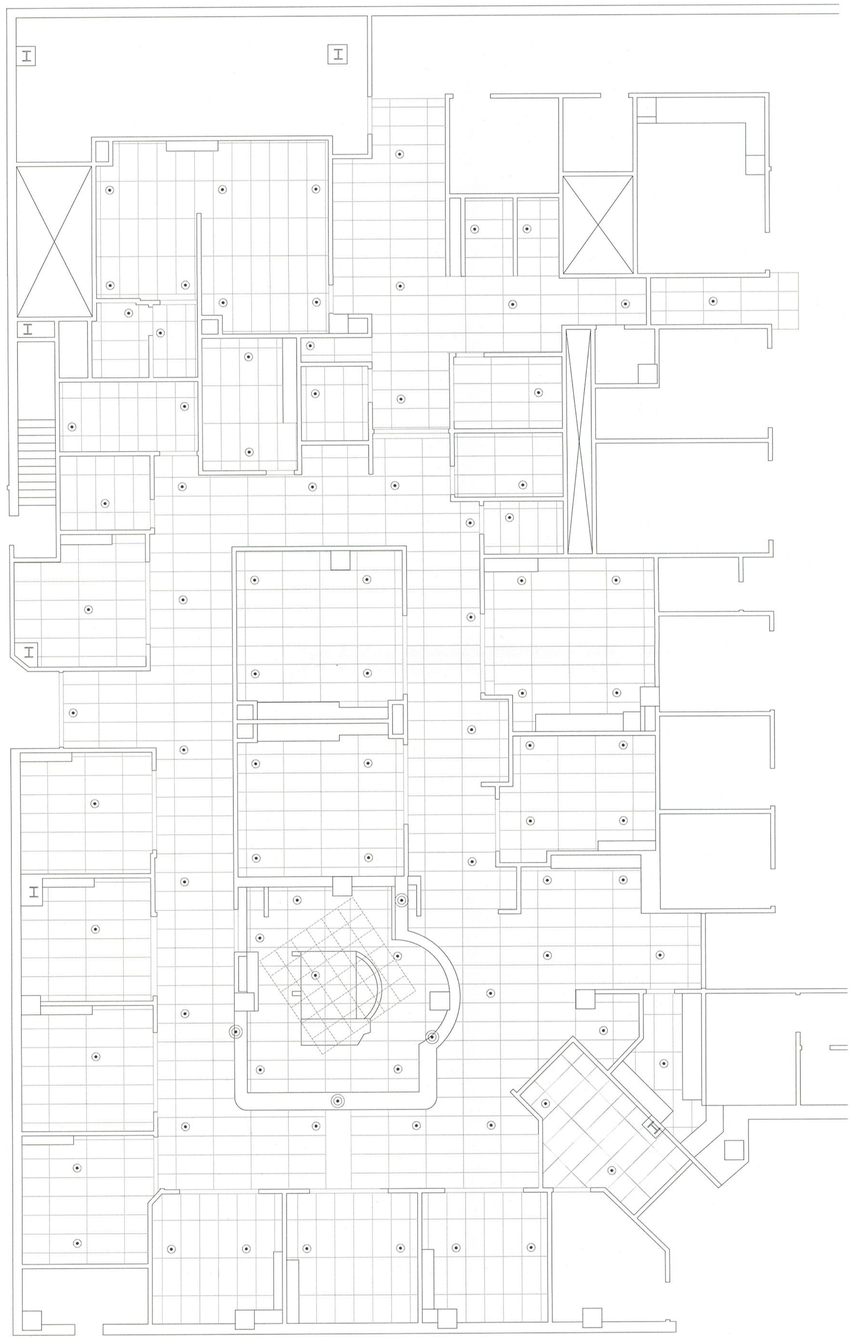
Plans picked up by:
Company Name
Phone:

Sprinkler Notes:

- Relocate sprinklers as shown
- All work to be done in compliance with NFPA 13 standards
- All materials to be as allowed by NFPA 13 2007 standards
- No work to be performed on existing mains or cross mains
- All sprinklers shall be supplied by existing outlets
- 155 degree quick response sprinkler pendent ½" orifice with concealed eschucheon

Sprinkler Legend: Viking VK462

- ⊙ Heads concealed
- ◉ Head in soffit



Sprinkler Plan
Scale: 1/8"=1'-0"

FIRST SHEET OF DRAWINGS (TITLE SHEET):

☐ General notes must include:

- THIS PROJECT CONSISTS OF A ____ STORY BUILDING, CONSTRUCTED OF ____ AND USED AS ____ (PER 2009 IBC, CHAPTER 5).
- TYPE OF CONSTRUCTION 1 ER SPK.
- BUILDING OCCUPANCY CLASSIFICATION PER THE 2009 IBC UBC 1-2 Existing
- SYSTEM #1 IS A ____ SYSTEM DESIGNED TO THE 2007 NFPA 13 EDITION.
- ALL BRANCH LINE PIPING TO BE _____.
- ALL FITTINGS ¾" THROUGH 2" TO BE ____ TYPE FITTINGS.
- ALL FITTINGS 2-1/2" & LARGER TO BE ____ GROOVED TYPE FITTINGS.
- ALL HANGERS TO BE IN ACCORDANCE WITH 2007 NFPA 13 EDITIONS.
- ALL MATERIAL TO MEET 2007 NFPA 13 EDITION.
- ALL UNDERGROUND PIPING TO BE TO BE TESTED AND FLUSHED PRIOR TO CONNECTING THE OVERHEAD PIPING SYSTEM.
- MAXIMUM SQUARE FOOTAGE PER HEAD IS ____ SQ. FT.
- SPRINKLER HEADS ____ TO BE LOCATED IN THE CENTER OF THE CEILING TILE OR ALIENED WITH LIGHT/CEILING FIXTURES.
- SPRINKLER CONTRACTOR TO BEGIN WORK AT ____.
- THE AUTHORITY HAVING JURISDICTION IS THE AURORA BUILDING DIVISION/LIFE SAFETY.
- SCOPE OF WORK ____ IN ACCORDANCE WITH THE 2009 IFC AND THE 2007 NFPA 13 EDITION.

☐ Specific notes required by the Aurora Building Division must include:

- OWNER IS RESPONSIBLE FOR PROVIDING HEAT, ABOVE 40 DEGREES FAHRENHEIT, ADEQUATE ENOUGH TO PREVENT FREEZING OF THE SPRINKLER PIPING.
- ALL VALVES CONTROLLING THE WATER SUPPLY TO 20 OR MORE SPRINKLER HEADS MUST BE SUPERVISED. AT THE TIME OF FINAL INSPECTION, FIRE SAFETY SYSTEMS MUST BE SUPERVISED BY AN APPROVED UL-LISTED MONITORING AGENCY.
- THE CONTRACTOR (OR DESIGNEE) MUST PROVIDE ALL NESSESSARY TESTING EQUIPEMENT AND PERFORM ALL TESTING REQUIRED BY THE LIFE SAFETY INSPECTOR.
- ALL NEW OR EXISTING FIRE ALARM SYSTEMS MUST BE INTERCONNECTED WITH THE FLOW SWITCH OF THE FIRE SPRINKLER SYSTEMS OUTSIDE HORN AND STROBE.
- INSTALLATION OF INTERIOR ALARMS ACTIVATED BY THE FIRE SPRINKLER WATER FLOW WILL BE REQUIRED PER 2009 IFC, 903.4.2. APPROVED AUDIBLE DEVICES SHALL BE CONNECTED TO EVERY AUTOMATIC FIRE SPRINKLER SYSTEM.
- IMPORTANT: IN THE EVENT THAT A CONCEALED SPACE IS NOT SHOWN ON THE PLAN SUBMITTAL AND IS DISCOVERED IN THE FIELD, THE INSTALLING CONTRACTOR MUST COMPLY WITH 2007 NFPA 13, SECTION 8.15.1.
- ALL WATER SUPPLY VALVES AND WATER FLOW SWITCHES SHALL BE ELECTRICALLY SUPERVISED, IFC 2007, 903.4.
- ELECTRICAL EXTERIOR HORN AND STROBE SHALL BE LISTED FOR OUTDOOR USE, IFC 903.4.2. OUTSIDE HORN AND STROBE WILL ACTIVATE UPON BOTH GENERAL ALARM AND FLOW SWITCH ACTIVATION. WHEN FIRE ALARM PANEL IS SILENCED, THE INTERIOR AND EXTERIOR STROBES WILL CONTINUE UNTIL FIRE ALARM PANEL IS RESET.
- ALL CONTROL VALVE(S) WITHIN THE RISER ROOM MUST BE ACCESSIBLE, 2007 NFPA SECTION 8.16.1.1.7.
- PRESSURE GAUGES ARE REQUIRED ON THE SYSTEM SIDE OF THE MAIN VALVE AND ON THE SUPPLY SIDE OF THE BACKFLOW PREVENTOR.
- BOTH NEW AND EXISTING FIRE SPRINKLER SYSTEMS MUST EQUIPPED WITH APPROVED KNOX CAPS.
- THE FIRE DEPARTMENT CONNECTION MUST BE LOCATED NOT LESS THAN 18 IN. AND NOT MORE THAN 4 FT ABOVE THE LEVEL OF THE ADJACENT GRADE OR ACCESS LEVEL. 2007 NFPA 13, SECTION A.8.17.2

659638
PERMIT # 12-600702
OCCUPANCY TYPE I-2
CONST. TYPE UBC 1 HR SPK
SQUARE FOOT
CODES REV'D IFC 2009
NFPA13 '07

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED JMP
DATE 6/8/12
NFPA13(07)

12-600702

Installed By:

Empire Fire & Safety, Inc.
10475 Irma Drive #17
Northglenn, Colorado 80233
Phone: 303-451-0975
Fax: 303-920-9298

Medical Center of Aurora
1st Floor Emergency Dept. Trauma Rennovation
1501 S. Potomac St.
Aurora, Colorado 80012

Sprinkler Layout

Drafted By:
C&S Design
2893 So. Paris Court
Aurora, Colorado 80014
Phone: 303.695.4071
Fax: 720.747.1402

Empire Fire & Safety Job Number:

Empire Contact:
Dave Walker

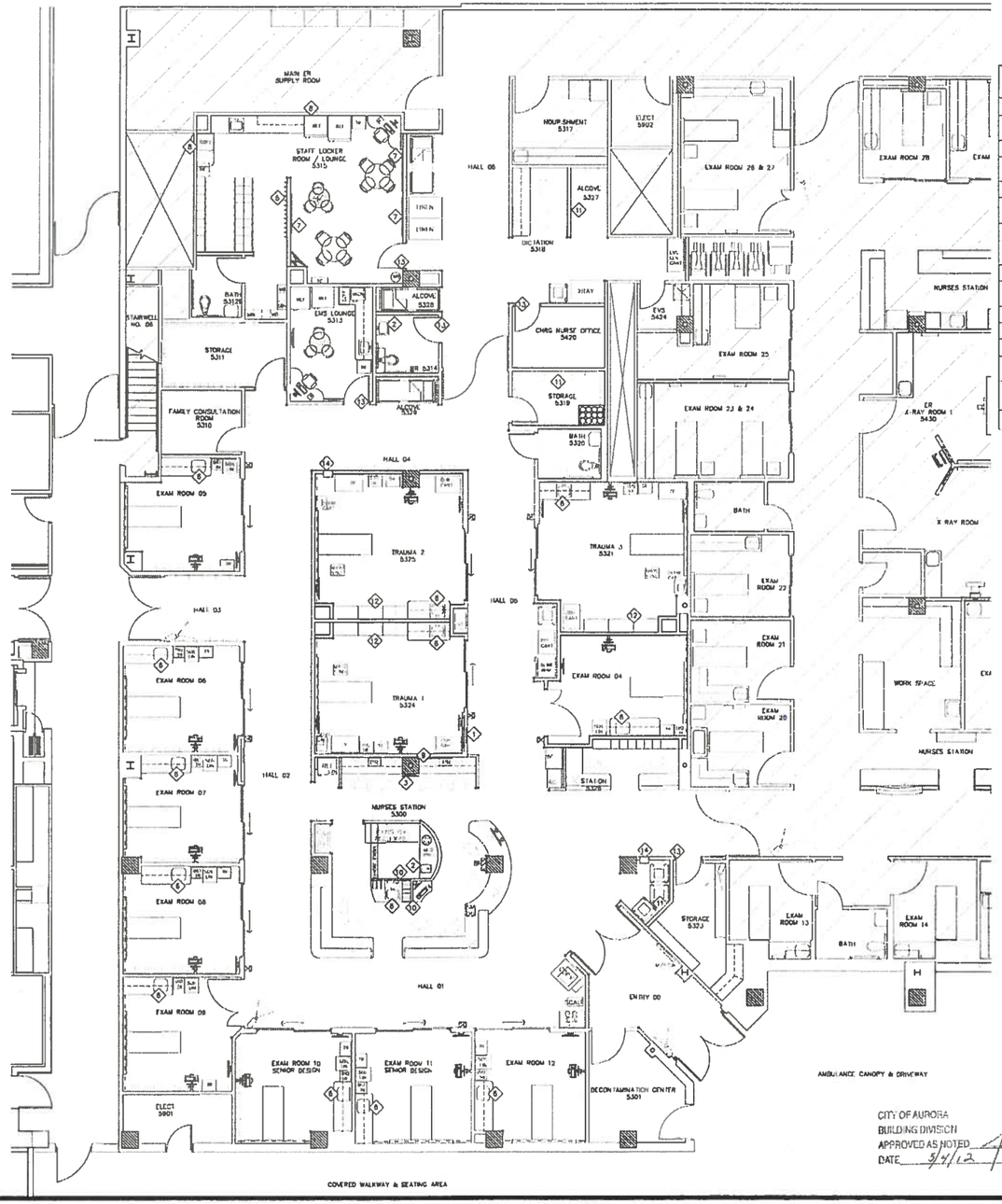
Engineer's Stamp:

Date: 5/22/12 | Scale: 1/8"=1'-0"

Revisions:

Drawing Name:
Med.Ctr. – Trauma Sprinklers

Sheet
1 of 1



New Floor Plan
For Reference Only

FLOOR PLAN
1/8" = 1'

3	SUITABLE DOOR FRAME LOCATION FROM SALVAGED INVENTORY
4	INSTALL SALVAGED FIRE EXTINGUISHER CABINET.

GENERAL NOTES	
A.	ALL EQUIPMENT - OWNER SUPPLIED / CONTRACTOR INSTALLED.
B.	CONFIRM EXISTING WALLS SHOWN TO REMAIN MEET REQUIREMENTS OF CURRENT CODES. UPGRADE TO MEET CURRENT REQUIREMENTS. SEAL ALL PENETRATIONS WITH REQUIRED SEALANT AND ENSURE ALL WALL ASSEMBLIES ARE COMPLETE.
C.	RELBUILD EXISTING FAUCETS FOR EXISTING AND RELOCATED SINKS
D.	REPLACE FIRE SPRINKLER HEADS THROUGHOUT SCOPE OF CONSTRUCTION WITH NEW CONCEALED, FLUSH MOUNT TYPE TO MATCH HOSPITAL STANDARDS.
E.	NEW CASEWORK THROUGHOUT. RE: ELEVATIONS
F.	INSTALL NEW WALL MOUNT BRACKET FOR FLAT SCREEN TV. (TV BY OWNER, INSTALLATION BY GC). INSTALL AT NEW LOCATIONS AS SHOWN
G.	COORDINATE ALL DOOR HARDWARE GROUPS WITH HOSPITAL FACILITIES DEPT.
H.	KORESEAL TRAFFIC PATTERN WALL TREATMENT TO BE APPLIED TO ALL EXAM & TRAUMA ROOM HEADWALLS. RE: ELEVATIONS. FINISH PLAN SHOWS LOCATION OF TREATMENT IN HALLWAYS. NOTE: USE COLOR MATCH CAULK AT SEAMS & CORNERS.
I.	UPGRADE MED GAS ALARMS THROUCHOUT TO CURRENT HOSPITAL STANDARDS.
J.	BOTH SETS OF ENTRY DOUBLE DOORS, ALL EXAM ROOM DOORS, AND ALL TRAUMA ROOM DOORS WILL BE SUPPLIED & INSTALLED BY VENDOR, COLORADO DOOR CONTROLS.
K.	REPLACE ALL OUTLET AND LIGHT SWITCH COVERS FROM IVORY TO WHITE THROUGHOUT SCOPE OF CONSTRUCTION.
L.	LOCKERS WILL BE FURNISHED AND INSTALLED BY OWNER.
M.	UPGRADE NURSE CALL SYSTEM. OWNER SUPPLIED / VENDOR INSTALLED.
N.	LAVATORIES AND SINKS SHALL BE ACCOMPANIED BY A PAPER TOWEL DISPENSER AND SOAP DISPENSER UNLESS OTHERWISE NOTED ON ENLARGED PLANS.
O.	SUPPLY ALL CABINET DRAWERS & DOORS IN EXAM AND TRAUMA ROOMS WITH LOCKS FOR ONE MASTER KEY (EXCLUDE STANLEY INNERSPACE STORAGE CABINETS IN TRAUMA ROOMS).
P.	PROVIDE BACKING FOR ALL WALL MONITORS

This plan was reviewed for adopted codes and NOT reviewed for compliance with ADA or FHA accessibility. Contact 800-949-4232 (ADA) and 303-894-7822x325 (FHA) for federal accessibility requirements that apply to your project.

Structural plan review is limited to a general survey for code compliance. No review is implied nor was undertaken to verify structural adequacy.

LEGEND:	
	INDICATES OUT OF PROJECT SCOPE
	54" AFF (48" SHEETS) ACROVYN WALL PANELING -DESERT SAND.
	REPRESENTS HEADWALL IN PATIENT ROOMS
	HAND SANITIZER
	LOW WALL PARTITION. RE: ELEVATIONS FOR HEIGHT AND DIMENSIONS
WALL PROTECTION:	
	DENOTES 48" ACROVYN CONERGUARD. APPLY TO TOP OF WALL BASE.
	WALL MOUNTED PC. OWNER SUPPLIED / CONTRACTOR INSTALLED
	TELEVISION. OWNER SUPPLIED / CONTRACTOR INSTALLED.
	REPRESENTS FULL HEIGHT KORESEAL TRAFFIC PATTERNS WALL TREATMENT COLOR: WP-1 VENETIAN VELVET BIRCH V521-03

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE 3/4/12

12-592666

12-600702

MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST
AURORA, COLORADO 80012

TOM THOMPSON ARCHITECT
2510 SOUTH OSCEOLA STREET
DENVER, COLORADO 80219
720.989.6084
TomThompsonArchitect@gmail.com

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STATE OF COLORADO
TOM THOMPSON
305892
LICENSED ARCHITECT
04.20.12

PROJECT NO.:	12-01
DRAWN BY:	TH
CHECKED BY:	TT
SCALE:	1/8" = 1'-0"
DATE:	04/20/2012
ISSUED FOR:	CONSTRUCTION
REVISIONS:	

SHEET TITLE:
FLOOR PLAN

SHEET NO.:
A-102

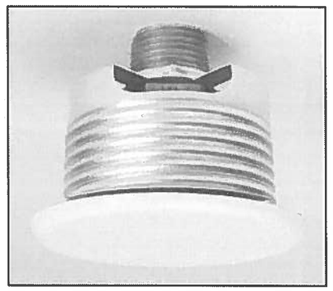
VIKING®

TECHNICAL DATA

MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION



Viking Mirage® Standard and Quick Response Concealed Pendent Sprinkler VK462 and HP Sprinkler VK463 are thermosensitive glass-bulb spray sprinklers designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired.

The sprinkler is pre-assembled with a threaded adapter for installation with a low-profile cover assembly that provides up to ½" (12.7 mm) of vertical adjustment. The two-piece design allows installation and testing of the sprinkler prior to installation of the cover plate. The "push-on", "thread-off" design of the concealed cover plate assembly allows easy installation of the cover plate after the system has been tested and the ceiling finish has been applied. The cover assembly can be removed and reinstalled, allowing temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler.

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approval: Class 2015

NYC Approved: MEA 89-92-E, Volume 32

VdS Approved: Certificate G4080021

LPCB Approved: Ref. No. 096e/12

CE Certified: Standard EN 12259-1, EC-certificate of conformity 0832-CPD-2032

Refer to Approval Chart 1 on page 54c and Design Criteria on page 54d for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 54e for FM Approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2006.

Minimum Operating Pressure: 7 psi (0.5 bar)*

Maximum Working Pressure: Sprinkler VK463 is rated for use with water working pressures ranging from the minimum 7 psi (0.5 bar) up to 250 psi (17.2 bar) for high-pressure systems. High-pressure (HP) sprinklers can be identified by locating "250" stamped on the deflector. Sprinkler VK462 is rated to a maximum 175 psi (12 bar) wwp.

Factory tested hydrostatically to 500 psi (34.5 bar)

Thread size: 1/2" (15 mm) NPT

Nominal K-Factor: 5.6 U.S. (80.6 metric†)

Glass-bulb fluid temperature rated to -65°F (-55°C)

12-600702

Patents Pending

*cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

†Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Material Standards:

Sprinkler Body: Brass UNS-C84400

Deflector: Copper UNS-C19500 for Sprinkler VK462
Phosphor Bronze UNS-C51000 for Sprinkler VK463

Deflector Pins: Stainless Steel Alloy

Bulb: Glass, nominal 3 mm diameter

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Button: Brass UNS-C36000

Screws: 18-8 Stainless Steel

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape

Yoke: Phosphor Bronze UNS-C51000

Cover Adapter: Cold Rolled Steel UNS-G10080, Finish: Clear Chromate over Zinc Plating

Viking Technical Data may be found on The Viking Corporation's Web site at http://www.vikinggroupinc.com. The Web site may include a more recent edition of this Technical Data Page.

VIKING®

TECHNICAL DATA

MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Cover Assembly Materials:
Cover: Copper UNS-C11000
Base: Brass UNS-C26000 or UNS-C26800
Springs: Nickel Alloy
Solder: Eutectic

Ordering Information: (Also refer to the current Viking price list.)
Viking Mirage® Standard and Quick Response Concealed Pendent Sprinklers and Cover Plate Assemblies must be ordered separately.
Sprinkler: Base Part No. 13503A or HP Base Part No. 13667A
Specify sprinkler temperature rating by adding the appropriate suffix for the temperature rating to the base part number.
Temperature Suffix: 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E
For example, sprinkler VK463 with a 155 °F (68 °C) temperature rating = 13667AB.
Cover Plate Assembly: Base Part No. 13504 (2-3/4" diameter), Base Part No. 13642 (3-5/16" diameter), or Base Part No. 15394 (square cover plate, 3-5/16" diameter)
Specify finish and temperature rating of the cover plate assembly by adding the appropriate suffixes for the finish and the cover temperature rating to the base part number.
Finish Suffix: Polished Chrome = F, Brushed Chrome = F-/B, Bright Brass = B, Antique Brass = B-/A, Brushed Brass = B-/B, Brushed Copper = E-/B, Painted White = M-/W, Painted Ivory = M-/I, Painted Black = M-/B
Temperature Suffix: 135 °F (57 °C) UL (139 °F (59 °C) FM and LPCB) = A, 165 °F (74 °C) = C
For example, cover 13504 with a Polished Chrome finish and a 165 °F (74 °C) temperature rating = 13504FC.
Note: Square cover plate 15394 cULus Listing is for the 135 °F (57 °C) temperature rated cover plate only. Refer to the Approval Chart.
Available Finishes And Temperature Ratings: Refer to Table 1.
Accessories: (Also refer to the "Sprinkler Accessories" section of the Viking data book.)
Sprinkler Wrenches:**
A. Heavy Duty Wrench Part No. 14047W/B (available since 2006), or
B. Head Cabinet Wrench Part No. 14031*** (available since 2006)
C. Optional Concealed Cover Plate Installer Tool Part No. 14412 for cover 13504, or Part No. 14867 for the large diameter cover (available since 2007)

**Requires a ½" ratchet (not available from Viking). ***Optional for removal of the protective cap. Ideal for sprinkler cabinets.

Sprinkler Cabinet: Part No. 01731A (available since 1971)

4. INSTALLATION
Refer to appropriate NFPA Installation Standards.

5. OPERATION
During fire conditions, when the temperature around the sprinkler approaches its operating temperature, the cover plate detaches. Continued heating of the exposed sprinkler causes the heat-sensitive liquid in the glass bulb to expand and the bulb to shatter, releasing the yoke, pip-cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY
Viking Sprinklers VK462 and VK463 are available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE
For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

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MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

TECHNICAL DATA

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating[1]	Maximum Ambient Ceiling Temperature[2]	Temperature Rating of Cover Assembly (Required)	Bulb Color
Ordinary	155 °F (68° C)	100 °F (38 °C)	135 °F (57 °C) cULus 139 °F (59 °C) FM and LPCB	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	165 °F (74 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	165 °F (74 °C)	Green

Cover Plate Finishes: Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black

Footnotes

[1] The sprinkler temperature rating is stamped on the sprinkler deflector.

[2] Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

Approval Chart 1 (UL)

Mirage® Concealed Pendent Sprinklers VK462 and VK463

AW1◂ Sprinkler Temperature Rating / Cover Plate Temperature Rating / Cover Plate Finish — KEY

Sprinkler Base Part No.[1]	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Listings and Approvals[4] (Refer also to Design Criteria on page 54d.)				
		Inch	mm	U.S.	metric[2]		cULus[5]	NYC	VdS[7]	LPCB	CE
Standard Response Applications											
13503A	VK462	1/2"	15	5.6	80.6	175 psi (12 bar)	--	--	AY1, CZ1	AY1, BZ1	AY1, CZ1[8]
Quick Response Applications											
13503A	VK462	1/2"	15	5.6	80.6	175 psi (12 bar)	AV1, BX1	AV1, BW1[6]	--	--	--
13667A	VK463	1/2"	15	5.6	80.6	250 psi (17.2 bar)[3]	AV1, BX1	AV1, BW1[6]	--	--	--

Sprinkler Temperature Ratings

A - 155 °F (68 °C)
B - 175 °F (79 °C) and 200 °F (93 °C)
C - 200 °F (93 °C)

Cover Plate Assembly Temperature Ratings[9]

V - 135 °F (57 °C) cULus Listed cover 13504[1], 13642[1] (large diameter), or 15394[1] (square cover plate)
W - 165 °F (74 °C) cover 13504[1] or 13642[1] (large diameter)
X - 165 °F (74 °C) cover 13504[1], or 13642[1] (large diameter)
Y - 135 °F (57 °C) cover 13504[1] *LPCB Approved as 139 °F (59 °C)*
Z - 165 °F (74 °C) cover 13504[1]

Cover Plate Assembly Finishes[10]

1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black

Footnotes

[1] Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.

[2] Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

[3] The Water Working Pressure rating is stamped on the deflector.

[4] This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.

[5] Listed by Underwriter's Laboratories for use in the U.S. and Canada.

[6] Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 32.

[7] VdS Approved, standards VdS 2344:2005-12, VdS 2100-25:2008-01, and EN 12259-1:1999 + A1:2001 + A2:2004 + A3:2006, Certificate G4080021.

[8] CE Certified, Standard EN 12259-1, EC-certificate of conformity 0832-CPD-2032.

[9] The 135/139 °F cover has an orange label. The 165 °F (74 °C) cover has a white label.

[10] Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information.

NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.

12-600702

MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

TECHNICAL DATA

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 on page 54c.)

cULus Listing Requirements:

Mirage® Concealed Pendent Sprinklers VK462 and VK463 are cULus Listed as quick response for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below.

- For hazard occupancies up to and including Ordinary Hazard, Group II.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.

NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.

VdS Approval Requirements:

a) The sprinkler can be installed in a concrete ceiling (massive ceiling) or in a false ceiling made of light materials.

b) This sprinkler is deflector fixed type and can be only activated by heat. The housing is not tight.

c) Follow installation guidelines of current standards, CEA4001VdS and EN12845. These sprinklers can only be installed in LH and OH occupancies, except in OH4.

NOTES: Due to the design the sprinkler type 'Domed-CCP' shall not be installed in false ceilings in which the false ceiling space is protected by a water extinguishing system.

Due to the design the sprinkler type 'Domed-CCP' shall not be installed in false ceilings in which during a fire the pressure above the false ceiling may be assumed to be higher than the pressure below the false ceiling.

The criterion for the dropping of the cover relevant for this approval is heat.

Steps of installation:

1. Prepare the sprinkler key.
2. Remove the plastic cover.
3. Hold the sprinkler with the wrench and fasten it.
4. Replace the plastic cover and do not remove until the cover is installed.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 or QR1-3 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.



Identification of Custom Paint Color:
All custom color painted cover plates will have an identifying label affixed to the inside of the cover that indicates custom color and will have a representative sample (a paint dot) of the paint on the label.

Figure 1: Identification of Custom Paint Color for Concealed Covers

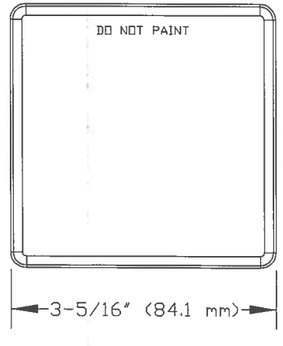


Figure 2: Square Cover Assembly 15394

112-600702

VIKING®

TECHNICAL DATA

MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Approval Chart 2 (FM)

Mirage® Standard Response Concealed Pendent Sprinkler VK462

Sprinkler Temperature Rating
Cover Plate Temperature Rating
AW1 ← Cover Plate Finish KEY

Sprinkler Base Part No.[1]	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	FM Approvals[3] (Refer also to Design Criteria below.)
		Inch	mm	U.S.	metric[2]		
13503A	VK462	1/2"	15	5.6	80.6	175 psi (12 bar)	AW1, BX1

Sprinkler Temperature Ratings
A - 155 °F (68 °C)
B - 175 °F (79 °C) and 200 °F (93 °C)

Cover Plate Assembly Temperature Ratings[4]
W - 139 °F (59 °C) cover 13504[1], 13642[1] (large diameter), or 15394[1] (square cover plate)
X - 165 °F (74 °C) cover 13504[1], 13642[1] (large diameter), or 15394[1] (square cover plate)

Cover Plate Assembly Finishes[5]
1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black

Footnotes

[1] Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.

[2] Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

[3] This chart shows the FM Approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.

[4] The 139 °F (59 °C) cover has an orange label. The 165 °F (74 °C) cover has a white label.

[5] Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information.

NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.

DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

FM Approval Requirements:

Viking Concealed Pendent Sprinkler VK462 is FM Approved as a standard response **Non-Storage** concealed pendent sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

12-600702

VIKING®

TECHNICAL DATA

MIRAGE® STANDARD AND QR CONCEALED PENDENT SPRINKLER VK462 AND HP SPRINKLER VK463 (K5.6)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

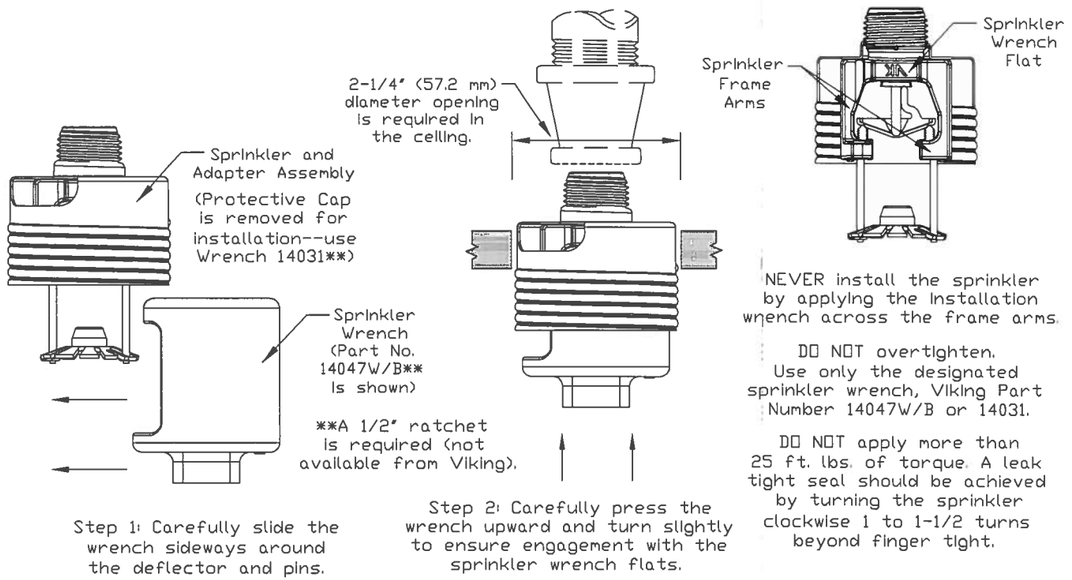


Figure 3: Sprinkler Installation and Correct Use of Wrenches

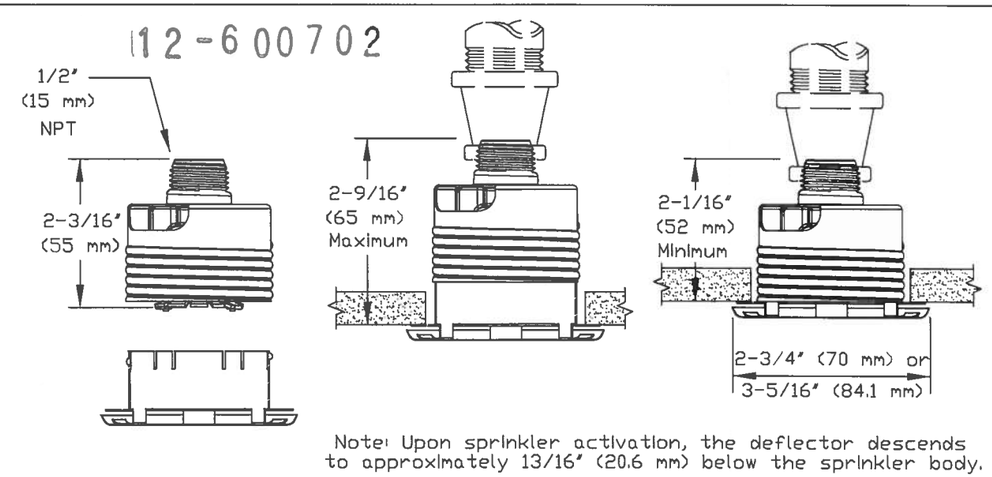


Figure 4: Sprinkler Dimensions and Cover Installation

Dyna-Thread®

Full Line Sch-40 Replacement

Dyna-Thread® offers the life expectancy of Sch-40 with superior hydraulics and greater value.

Dyna-Thread sprinkler pipe represents an engineering advancement for the sprinkler pipe industry. It combines the safety and longevity of traditional Sch-40 pipe with quality and superior hydraulic advantages.

Comparison to Schedule 40

- Dyna-Thread's inside diameter is up to 3.6% larger than Sch-40 giving it superior hydraulics. And, when used in combination with Dyna-Flow pipe, down sizing often occurs.
- Dyna-Thread is fully listed and approved by UL, ULC, and FM for fire sprinkler applications.
- The life expectancy of Dyna-Thread and Sch-40 are equal based on the calculated wall thicknesses per UL.
- The consistent quality of steel used to make Dyna-Thread facilitates smooth threading and lower maintenance costs.
- The exterior of Dyna-Thread is protected by a clean, durable mill coating for extended shelf life and easy paint application.
- With its increased strength and lighter weight, Dyna-Thread reduces installation fatigue and is ideal for retro-fit applications.

Corrosion Resistance Ratio (CRR) is a UL (Underwriters Laboratory) term for the estimated life expectancy of a pipe joint. This is based on the calculated wall thickness at the base of the first exposed thread, assumed to be the weakest point of the pipe length. Dyna-Thread and Sch-40 have the same calculated wall thicknesses at this point and are both assigned the same CRR of 1.00.

The internal surface of all black Allied Tube & Conduit Fire Sprinkler pipe products up to 4.5000" in diameter is coated with our new Antibacterial Formula, "ABF". In scientific laboratory test, ABS proved to have superior resistance to microbial colonization of pipe walls, thereby delaying or possibly preventing the onset of Microbiologically Influenced corrosion (MIC) when the First Sprinkler System is first installed.

Listed Approved Listed

Comparison to L.W.T. Pipes

- More wall thickness at the thread (CRR=1.00) gives Dyna-Thread better life expectancy than lightwall threadable pipe joints.
- Unlike lightwall threadable pipe, Dyna-Thread has no thread gauge warning.
- Dyna-Thread is approved for standard hanger spacing (15 ft. O.C.), can be used as earthquake sway bracing, and is safe to use as drops.
- Dyna-Thread is safer to weld on.
- Dyna-Thread is more widely accepted than lightwall threadable where Sch-40 is specified.

Specifications & Approvals

Super 40/Dyna-Thread pipe is manufactured to meet: ASTM A-135, Grade A and is in compliance with NFPA-13. All sizes of Super 40/Dyna-Thread are rated at 300 psi working pressure. Super 40/Dyna-Thread is UL and ULC Listed for wet, dry deluge and pre-action sprinkler systems and FM Approved for use in wet systems. Super 40/Dyna-Thread can be "hot-dip" galvanized to meet FM requirement for dry systems. Super 40/Dyna-Thread is approved for all threaded couplings and welded outlets and is suitable for all roll-grooved, and plain-end fittings. (See listing information).

Specifications

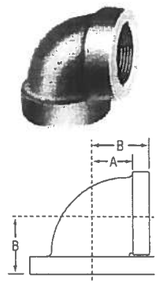
NPS *In; mm*	Nominal I.D. *In; mm*	Wt. *Lbs/Ft; Kg/m*	Wt. (H2O Filled) *Lbs/Ft; Kg/m*	Pcs/ *Lift*	Wt/Lift (21') *Lbs; Kg*	Wt/Lift (24') *Lbs; Kg*	Wt/Lift (25') *Lbs; Kg*
1"	1.080	1.330	1.75	70	1955	2234	2327
25	*27.4*	*2.0*	*2.60*	*70*	*887*	*1013*	*1056*
1¼"	1.408	1.870	2.54	51	2002	2288	2384
32	*35.8*	*2.8*	*3.78*	*51*	*908*	*1038*	*1081*
1½"	1.639	2.290	3.22	44	2115	2418	2519
40	*41.6*	*3.4*	*4.79*	*44*	*959*	*1097*	*1143*
2"	2.104	3.050	4.57	30	1921	2196	2287
50	*53.4*	*4.5*	*6.80*	*30*	*871*	*996*	*1037*

tyco / Flow Control 12-600702 allied TUBE & CONDUIT

16100 S. Lathrop • Harvey, IL 60426
11350 Norcom Rd. • Philadelphia, PA 19154
2525 N. 27 th Ave. • Phoenix, AZ 85009

Customer Service:
(800) 882-5543
Fax 708-339-1806

Cast Iron Threaded Fittings
Class 125, (Standard)

90° Elbow Straight Figure 351	Size (NPS)	A (in)	B (in)	Weight (lbs)	
				black	galv.
	1/4	1/2	13/16	.16	.17
	3/8	9/16	15/16	.25	.26
	1/2	11/16	1 1/8	.40	.41
	3/4	13/16	1 5/16	.60	.61
	1	15/16	1 1/2	.92	.95
	1 1/4	1 1/8	1 3/4	1.44	1.46
	1 1/2	1 5/16	1 15/16	1.95	2.00
	2	1 9/16	2 1/4	3.13	3.21
	2 1/2	1 13/16	2 11/16	4.94	5.13
	3	2 3/16	3 1/8	7.21	7.40
	4	2 11/16	3 13/16	12.17	12.67
	5	3 5/16	4 1/2	21.46	—
	6	3 7/8	5 1/8	31.33	33.33
	8	5 3/16	6 9/16	64.56	67.14

Cast Iron Threaded Fittings Pressure - Temperature Ratings		
Temp.(°F)	Pressure, (psig)	
	Class 125	Class 250
-20° to 150°	175	400
200°	165	370
250°	150	340
300°	140	310
350°	125	300
400°	--	250

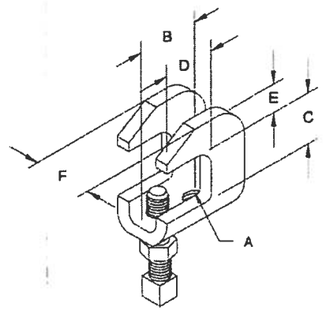
12-600702

TOLCO

INCORPORATED
CORONA, CA (909)737-5599

Fig. 65 and Fig. 66
Reversible C-Type Beam Clamps
3/4 and 1-1/4 Inch Throat Openings

Size Range – (Fig. 65 and Fig. 66) 3/8, 1/2, AND 5/8 inch rod.
Material – Carbon Steel with hardened cup point set screw and jam nut.
Function – Recommended for hanging from steel beam where flange thickness does not exceed 3/4 inch (Fig. 65) or 1-1/4" (Fig. 66)
Features – All steel construction eliminates structural deficiencies associated with casting type beam clamps. May be used on top or bottom flange of the beam. (Beveled lip allows hanging from top flange where clearance is limited.) May be installed with set screw in up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp. Open design permits inspection of thread engagement.
Approvals– Underwriters' Laboratories Listed in the USA (UL) and Canada (cUL). Factory Mutual Engineering Approved. Conforms to Federal Specification Society SP-69, type 19 and 23. Exceeds requirements of the National Fire Protection Association (NFPA), Pamphlet #13, 3/8 inch rod will support 1/2 thru 4 inch pipe, 1/2 inch rod will support 1/2 thru 8 inch pipe.
Finish – Plain.
Note—Available in Electro-Galvanized and HDG finish.
Order By—Figure number, rod size, and finish.
Fig. 65 Patent #4,570,885



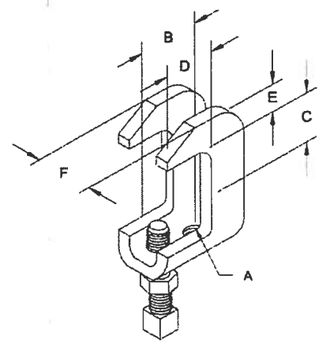


FIG. 65 TABLE

ROD SIZE A	B	C	D	E	F	MAX. REC. LOAD LBS.*	APPROX WT./100
3/8	1-3/16	3/4	1	7/16	1	610	28
1/2	1-1/2	3/4	1	9/16	1-1/4	1130	55
5/8	1-1/2	3/4	1	9/16	1-1/4	1130	55

*Max. loads for clamp with set screw in up or down position.

FIG. 66 TABLE

ROD SIZE A	B	C	D	E	F	MAX. REC. LOAD LBS.*	APPROX WT./100
3/8	1-3/16	1-1/4	1	7/16	1	610	28
1/2	1-1/2	1-1/4	1	9/16	1-1/4	1130	55
5/8	1-1/2	1-1/4	1	9/16	1-1/4	1130	55

*Max. loads for clamp with set screw in up or down position.

112-600702

STEEL — Sammys

Self-Drilling • Self-tapping



STEEL • 1/4" Rod (Vertical Mount)

Use #14 Nut Driver (Item #100)

Item #	Model	Screw Description	Box Qty	Weight (per 100)	Case Qty
50	DSTR 100	1/4-20x1	100	6.25	1000
51	DST 100	1/4-14x1	100	5.25	1000
52	DST 150	1/4-14x1 1/2	100	5.50	1000
53	DST 200	1/4-14x2	100	6.00	1000
54	DST 250	1/4-14x2 1/2	100	6.75	1000
55	DST 300	1/4-14x3	100	7.25	1000
56	TEK 500	12-24x1 1/2	100	5.50	1000



#14
(Item #100-black)
Sammys 1/4", 3/8" rod

STEEL • 3/8" Rod (Vertical Mount)

Use #14 Nut Driver (Item #100)

Approvals	Item #	Model	Screw Description	FM Test Load, lb.	UL Test Load lb.	UL/FM Pipe Size	Minimum Thickness	Maximum Thickness	Actual Pullout	Box
UL•FM•NFPA	29	DSTR 1 1/2"	12-24x1 1/2	1475#	1500#	3/4-4	1/4"	1/2"	1510# / 1/4"	
UL•FM•NFPA	30	DSTR 1"	1/4-20x1	1475#	1500#	3/4-4	.036"-20 ga	1/4"	1510# / 20 ga	
UL•NFPA	31	DSTR 516	5/16-18x1 1/4		1500#	4	.036"-20 ga	1/4"	2200# / 20 ga	
NFPA	32	DST 10	1/4-14x1	*Note: Screw diameter/design/ performance for the DST 10 (1" length) through the DST 30 (3" length) are constant. Only the lengths vary.*			.036"-20 ga	1/4"	446# / 20 ga	
NFPA	33	DST 15	1/4-14x1 1/2					1/4"	970# / 16 ga	
NFPA	34	DST 20	1/4-14x2					1/4"		
NFPA	35	DST 25	1/4-14x2 1/2					1/4"		
NFPA	36	DST 30	1/4-14x3					1/4"		
UL•NFPA	37	DST 516	5/16-18x1 1/4		1500#	4	188"-3/16"	1/4"	1500# / 3/16"	
FM•NFPA	38	TEK 50	12-24x1 1/2	1475#			1/4"	1/2"	3125# / 1/4"	

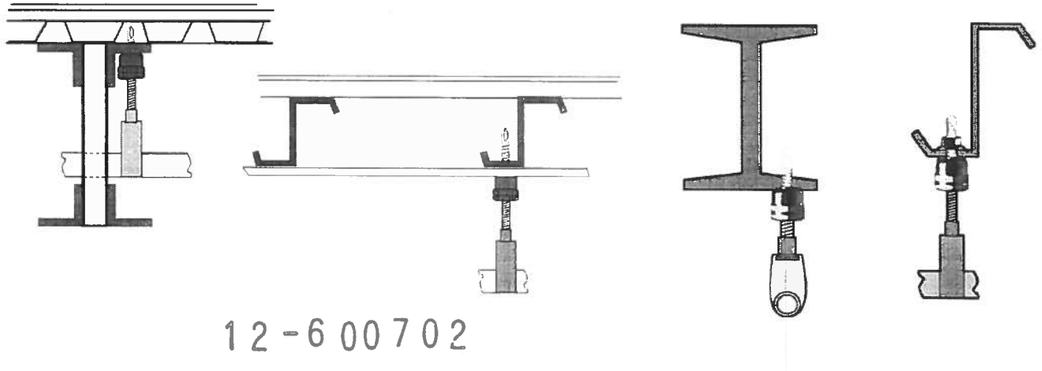
STEEL • 1/2" Rod (Vertical Mount)

Use #14SW Nut Driver (Item #101)

Item #	Model	Screw Description	Minimum Thickness	Maximum Thickness	Actual Pullout	Box Qty	Weight (per 100)	Case Qty
601	DST 2.0	1/4-14x2	.188"-3/16"	1/4"		50	6.75	500
1113	DST 2.5	1/4-14x2 1/2	.188"-3/16"	1/4"		50	7.25	500
422	DSTR 1.0	1/4-20x1	.036"-20 ga	1/4"	1510# / 20 ga	50	500.00	7
28	DSTR 5.16	5/16-18x1 1/4	.036"-20 ga	1/4"	2220# / 20 ga	50	8.00	500
443	DST 5.16	5/16-18x1 1/4	.188"-3/16"	1/4"	1500+# / 3/16"	50	6.75	500
05	TEK 5.0	12-24x1 1/2	.25"-1/4"	1/2"	3125# / 1/4"	50	6.00	500



#14SW
(Item #101-red)
Sidewinders &
Sammys 1/2" rod



12-600702

For fastening/anchoring in high vibratory environments, consult local code authorities for accepted anchoring devices

UL Listings and CAD Drawings are available at www.SammySuperScrew.com

Note: Screws must be installed with appropriate nut driver to comply with warranty

STEEL —Sidewinders

Self-Drilling • Self-tapping



steel screw shown with retainer nut
SWDR screws include retainer nut



#14SW
(Item #101-red)
Sidewinders &
Sammys 1/2" rod



STEEL • 1/4" Rod (Horizontal Mount)

Use #14SW Nut Driver (Item #101)

Item #	Model	Screw Description	Minimum Thickness	Maximum Thickness	Actual Shear/Pullout	Box Qty	Weight (per 100)	Case Qty
2003	SWD 100	1/4-14x1	.066"-16 ga	1/4"	1477# / 16 ga	100	6.00	1000
407	SWD 200	1/4-14x2	.066"-16 ga	1/4"	1477# / 16 ga	100	6.50	1000
206	SWDR 100	1/4-20	.036"-20 ga	1/4"	1900# / 20 ga	100	6.00	1000

STEEL • 3/8" Rod (Horizontal Mount)

Use #14SW Nut Driver (Item #101)

Approval	Item #	Model	Screw Description	UL Test Load lb.	UL/FM Pipe Size	Minimum Thickness	Maximum Thickness	Actual Shear/Pullout	Box Qty	Weigh (per 100
NFPA	39	SWD 10	1/4-14x1			.066"-16 ga	1/4"	1477# / 16 ga	100	6.00
NFPA	40	SWD 15	1/4-14x1 1/2	*Note: Screw diameter/design/performance for SWD 10 (1" length)*					100	7.50
NFPA	41	SWD 20	1/4-14x2	*through SWD 20 (2" length) are constant. Only the lengths varry.*					100	6.50
NFPA	42	SWD 516	5/16-18x1 1/4						100	7.00
UL•NFPA	46	SWDR 1 1/2"	1/4-20x1 1/2	1500#	4	.25"-1/4"	1/2"	2375# / .25"-1/4"	100	7.25
UL•NFPA	43	SWDR 1"	1/4-20x1	1500#	4	.036"-20 ga	1/4"	1900# / 20 ga	100	7.00
UL•NFPA	44	SWDR 516	5/16-18x1 1/4	1500#	4	.036"-20 ga	1/4"	2480# / 20 ga	100	8.25
NFPA	45	SWT 15	12-24x1 1/2			.25"-1/4"	1/2"		100	6.25

PERFORMANCE DATA FOR STEEL

SHEET STEEL GAUGES

Gauge No.	1/4	3/16	12	14	16	18	20	22	24	26
Decimal Equivalent	.25	.188	.105"	.075"	.060"	.048"	.036"	.030"	.024"	.018"

Ultimate Pullout Values - Sammys

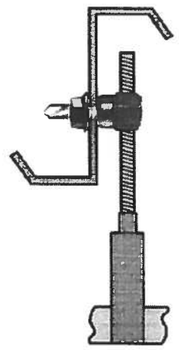
(average lbs. ultimate)

Fastener			Steel Gauge						
Model	Dia.	Pt.	20	18	16	14	12	3/16	1/4
DST	1/4	#3	446#	613#	970#	1145#	1544#	3190#	
DST 516	5/16	#3	457#	568#	1209#	1712#	2422#	3716#	
TEK 50	#12	#5		487#	699#	913#	1527#	3270#	3593#
DSTR 1 1/2"	#12	#5						3270#	3593#
DSTR 1"	1/4	#3	1510#						
DSTR 516	5/16	#3	2200#						

Ultimate Shear / Pullout Values - Sidewinders

(average lbs. ultimate)

Fastener			Steel Gauge						
Model	Dia.	Pt.	20	18	16	14	12	3/16	1/4
SWD	1/4	#3			1477#				
SWDR 1 1/2"	#12	#5	2375#						
SWDR 1"	1/4	#3	1900#			1900#			
SWDR 516	5/16	#3	2480#			2480#			



Aluminum Curtain Wall Extrusion

Ultimate Pullout Values

(average lbs. ultimate)

Fastener			Thickness			
Model	Dia.	Pt.	.114	.092	.365	.132
DST 10	1/4	#3	1265#		2750#	
SWD 10	1/4	#3		1120#		1420#

For fastening/anchoring in high vibratory environments, consult local code authorities for accepted anchoring devices

Note: Screws must be installed with appropriate nut driver to comply with warranty

12-600702

TOLCO

INCORPORATED

CORONA, CA (909)737-5599

Fig. 98
Rod Stiffener

Size **Range—Secures 3/8 thru 7/8 inch hanger rod.**
Material **– Carbon Steel.**
Function—Secures channel to hanger rod for vertical seismic bracing.
Finish—Electro Galvanized.
Order **By—Figure number.**
Note—Available in HDG finish or Stainless Steel materials.

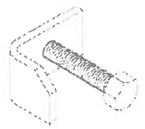
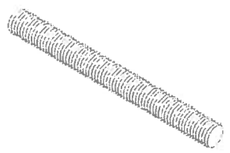




Fig. 99
All Thread Rod Cut To Length

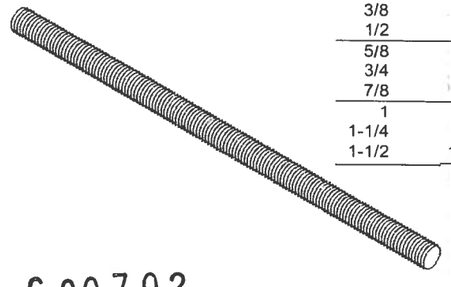
Size Range-3/8 **thru 7/8 inch rod in 1 inch increments.**
Material **– Carbon Steel.**
Maximum Temperature-750°F.
Finish **— Plain.**
Order **By—Figure number, rod diameter, rod length, and finish.**
Note—Available in Electro-Galvanized and HDG finish or Stainless Steel materials.



ROD SIZE	MAX. REC. LOAD LBS. FOR SERVICE TEMPS 650°F	750°F
3/8	610	540
1/2	1130	1010
5/8	1810	1610
3/4	2710	2420
7/8	3770	3360

Fig. 100
All Thread Rod Full Lengths

Size Range-3/8 **thru 7/8 inch rod in 10 foot lengths.**
Material **– Carbon Steel.**
Maximum Temperature-750°F.
Finish **— Plain.**
Order **By—Figure number, rod diameter, and finish. Note—Available in Electro-Galvanized and HDG finish or Stainless Steel materials.**



ROD SIZE	MAX. REC. LOAD LBS. FOR SERVICE TEMPS 650°F	750°F	APPROX. WEIGHT PER 100FT.
1/4	240	215	12
3/8	610	540	29
1/2	1130	1010	53
5/8	1810	1610	84
3/4	2710	2420	123
7/8	3770	3360	169
1	4960	4420	222
1-1/4	8000	7140	360
1-1/2	11630	10370	510

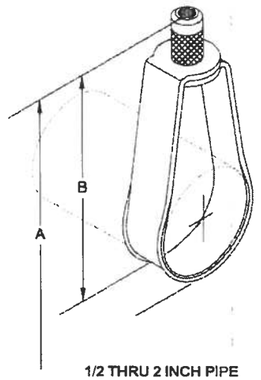
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CORONA, CA (909)737-5599

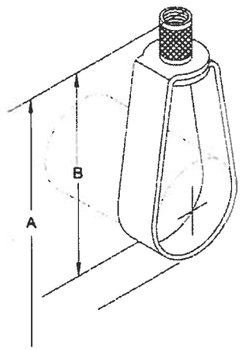
Fig. 200

"Trimline" Adjustable Band Hanger

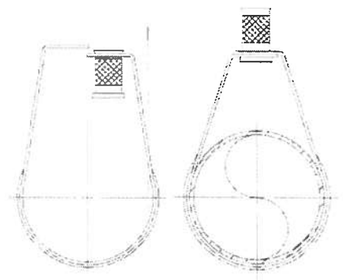
Size Range — 1/2 thru 8 inch pipe.
Material — Carbon Steel, Mil. Galvanized to G-90 specifications.
Function — For fire sprinkler and other general piping purposes. Knurled swivel nut design permits hanger adjustment after installation.
Features
• (1/2 thru 2 inch) Flared edges ease installation for all pipe types and protect CPVC plastic pipe from abrasion. Captured design keeps adjusting nut from separating with hanger. Hanger is easily installed around pipe.
• (2-1/2 thru 8 inch) Spring tension on nut holds it securely in hanger before installation. Adjusting nut is easily removed.
Approvals— Underwriters' Laboratories Listed (1/2" thru 8") in the U.S. (UL) and Canada (cUL) for steel and CPVC plastic pipe and Factory Mutual Engineering Approved (3/4" thru 8"). Conforms to Federal Specifications WW-H-171 E, Type 10, and Manufacturers Standardization Society SP-69, type 10.
Maximum Temperature - 650°F.
Finish — Mil. Galvanized, for Stainless Steel materials order Tolco Fig. 200WON.
Order By— Figure number and pipe size.



1/2 THRU 2 INCH PIPE



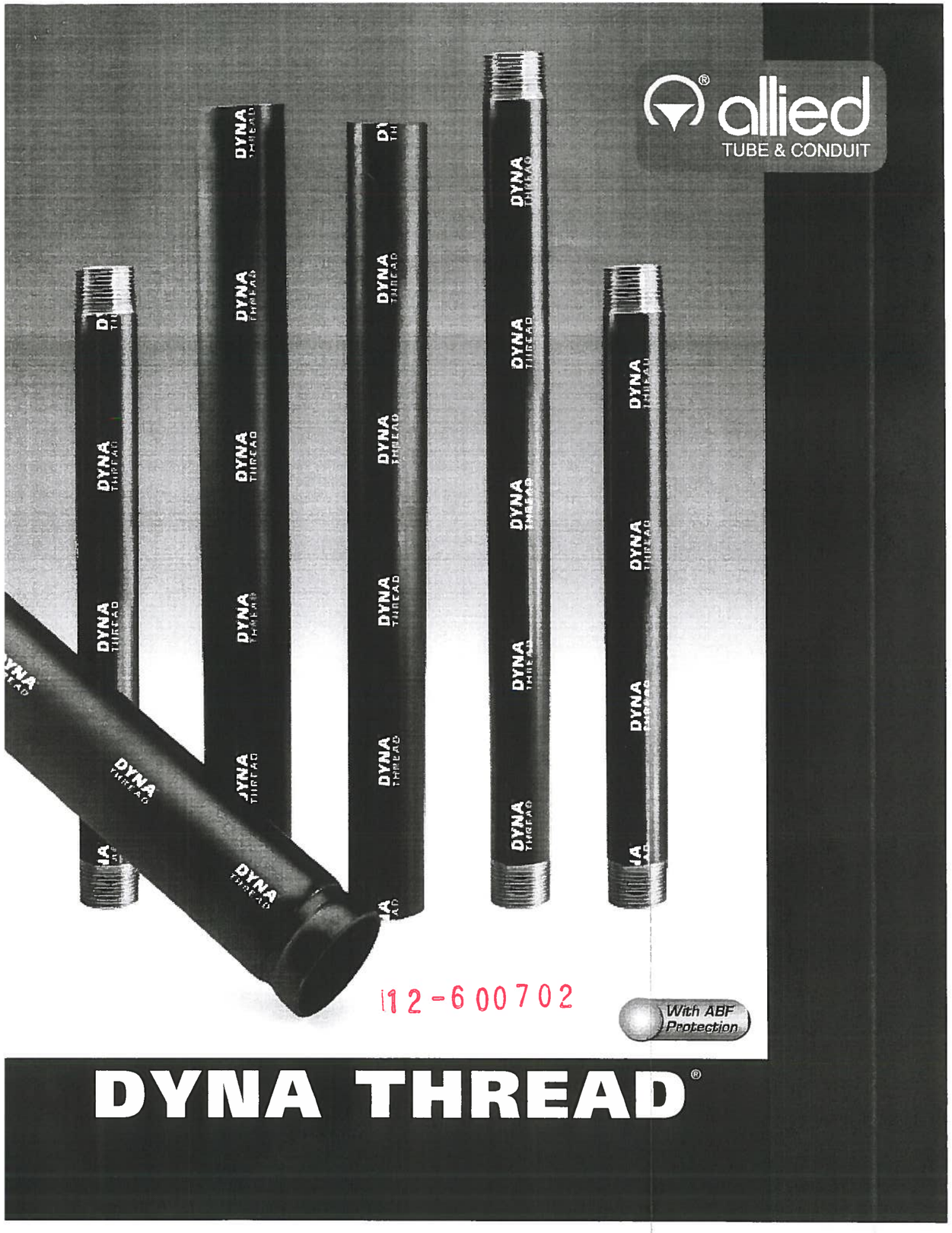
2 1/2 THRU 8 INCH PIPE



PIPE SIZE	ROD SIZE INCH	ROD SIZE METRIC*	A	B	MAX. REC. LOAD LBS.	APPROX. WT./100
1/2	3/8	8mm or 10mm	3-1/8	2-5/8	400	11
3/4	3/8	8mm or 10mm	3-1/8	2-1/2	400	11
1	3/8	8mm or 10mm	3-3/8	2-5/8	400	12
1-1/4	3/8	8mm or 10mm	3-3/4	2-7/8	400	13
1-1/2	3/8	8mm or 10mm	3-7/8	2-7/8	400	14
2	3/8	8mm or 10mm	4-1/2	3	400	15
2-1/2	3/8	10mm	5-5/8	4-1/8	600	27
3	3/8	10mm	5-7/8	4	600	29
3-1/2	3/8	10mm	7-3/8	5-1/4	600	34
4	3/8	10mm	7-3/8	5	1000	35
5	1/2	12mm	9-1/8	6-1/4	1250	66
6	1/2	12mm	10-1/8	6-3/4	1250	73
8	1/2	12mm	13-1/8	8-3/4	1250	136

*Order Fig. 200M

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