

# TECHNICAL SEMINAR ON GLOBAL CONSTRUCTION TRENDS AFFECTING PROJECT PRODUCTIVITY

10 July 2013



#### Speaker : Mr Scott Howser

As the Vice President and General Manager of North Asia, Scott Howser is responsible for driving short- and long-term strategic business initiatives and assuring operational excellence in Greater China (China, Hong Kong, Macau, Taiwan), Korea and Japan. Mr. Howser strategically focuses on the continued growth in developing the key Victaulic markets, including Fire Protection, Mining, HVAC, Maritime, Industrial and OEM.

Mr. Howser has been with Victaulic since 1998, and he has held several key positions. He oversaw Fire Protection sales for the Southwest United States, served as Regional Manager for the Western United States, and had responsibility for sales operation Mexico.



# Increase Productivity

# Reduce Risk

# Meet demanding construction schedules



#### GLOBAL CONSTRUCTION TRENDS AFFECTING PROJECT PRODUCTIVITY – HONG KONG

- Only 300,000 registered construction workers
- Shortage of skilled labor and higher demand driving construction costs up
  - FP Contractor on the Hong Kong International Airport Project paying labor over HK\$1600 per day
  - Lack of skilled labor, talent retention
  - Import labor from overseas by main contractors



#### GLOBAL CONSTRUCTION TRENDS AFFECTING PROJECT PRODUCTIVITY – HONG KONG

Increased demand for fast-track project delivery

- MTRC 5 key Railway Development (West Island Line, Guangzhou Shenzhen – Hong Kong Express Rail Link, Shatin to Central Link, Kwung Tong Line Extension, South Island Line (East)
- Projects Contract Sum HK\$180 billion and shall be completed before 2018.
- Short schedule windows to complete work



#### GLOBAL CONSTRUCTION TRENDS AFFECTING PROJECT PRODUCTIVITY – HONG KONG

Construction Jobsite Safety

Account for 20% of all industrial accidents in Hong Kong

Claim Compensation reached HK\$40 million in 2006



#### FIRE PROTECTION TECHNOLOGY DEVELOPMENT– RIGID COUPLINGS

- Need for innovation in Fire Protection
- I920s Victaulic invents grooved piping method
- I964: First grooved mechanical rigid coupling Tongue and Recess design
- I967:Victaulic introduces roll grooving
- I 980s Angled Bolt-pad overcome Tongue and Recess performance limitations
- I990s Pre-lubricated Gaskets
- 2006: Installation-Ready Technology







#### FIRE PROTECTION TECHNOLOGY DEVELOPMENT– RIGID COUPLINGS

- Original design models currently still on the market:
  - Tongue and Recess
    - Removed metal from housing
    - Smaller bolts and nuts
    - OEM outsourced gaskets lack of quality oversight
    - Require torque
    - Mis-assembly and rework
    - Sensitive to groove depth
    - Bolt pad gaps
    - Cannot be installed with an impact wrench





# **ISSUES USING TRADITIONAL COUPLINGS**





### WHY TAKE APART COUPLINGS?







# **Optimizing Project Schedules**





#### **Bulent Barutcu, Chief Mechanical Engineer**

It was recommended that we use a new 'installation ready' fire protection coupling from Victaulic—the Firelock  $EZ^{TM}$  Style 009. The results were significant: We were able to reduce man-hours on site by 35% and meet the tighter building deadlines.

Bulent Barutcu, Chief Mechanical Engineer, MEP Construct International, Romania



#### Rusty Gravitt, President

- In estimating project profitability, we know historically we can produce 75% more revenue per man-hour using Victaulic systems—primarily because the grooved and Pressfit solutions are so much faster to install. We can use fewer men per project using Victaulic than when using a traditional welding or thread and couple system.Victaulic allows us to be more accurate in the bid process because their system is much more predictable.
- Rusty Gravitt, President, Gainesville Mechanical Inc., Georgia, USA





#### FIRE PROTECTION TECHNOLOGY DEVELOPMENT– FLEXIBLE DROPS

- I980'S First introduced in Japan
  - Seismic performance requirements
  - Safety needs
- I999 ULI474 Listing Standard
- 2006 IBC adds in seismic zones as "preferred method"
- 2007 NFPA 13 Code update
  - Allowance for flexible systems up to 72" without hanger
- 2007 UL2443 Listing standard
- 2009 Installation-ready bracket technology
- 2012 Improved design of installation-ready bracket







# APPLICATIONS

- Metal Stud Ceilings
  - Gypsum/Hard-Lid









- Traditional Hardpipe Install
  - Hard pipe systems:
    - I2-I5 units/day/man
  - VicFlex System:
    - ▶ 60-90 units/day/man
- Tight spaces and multiple bends
  Only one test





# ADVANTAGES OF SPECIFYING VICFLEX – REDUCE RISK

- Why are flexible drops safer than hard pipe?
  - Microbiologically Induced Corrosion (MIC)
    - Stainless steel offers far superior MIC resistance over black pipe
    - Assure Sprinklers operate when needed





# POTENTIAL HAZARDS OF FIXED RIGID PIPING WITH DROP/SUSPENDED CEILINGS

- Rigid pipe does not allow sprinkler to stay in proper alignment with ceiling tile plane
  - Ceiling may sag over time or move due to seismic events
  - Sprinkler performance may be compromised



# ADVANTAGES OF SPECIFYING VICFLEX

- The most dangerous problem that is never discussed
  - Proper sprinkler head position
    - Flexible drops move with ceiling as natural settling or sag occur
    - Rigid piping does not move with ceiling









# **Response Time**





4901 Kesslersville Road • Easton PA • 18040 1-610-559-3300 www.victaulic.com



# WHAT HAPPENS WHEN A SPRINKLER HEAD IS IMPROPERLY ALIGNED WITH THE CEILING?

Sprinkler not properly exposed to heat and air flow

- Ceiling now acts as heat deflector
- Delays or fails to activate in time to check growth of fire
- Flashover much more likely

42% of instances where sprinklers have not been effective was due to water not adequately reaching the fire\*

# ADVANTAGES OF SPECIFYING VICFLEX

- Flexible Sprinkler Exceed IBC Code
  - Connection provide characteristics that exceed the most stringent seismic code requirements.
  - Flexibility of hose allows head to move with the ceiling in any direction during seismic event without causing damage



# **INCREASING PRODUCTIVITY**

# Reduced material handling

- 3.5kg of steel per hard pipe drop (1m)
- 2000 drops = 7000kg of steel being moved on site
- Coordinated jobsite deliveries
- Coordination with other trades

Ability to adjust as obstructions are presented





# INCREASING PRODUCTIVITYManaging labor

# Focus on reducing variable cost Labor 60%, Material 40% Shift to 80% Material and 20% labor (variable) More efficient use of diverse labor Equalize labor talent productivity Less labor per installation



# MINIMIZING RISK Increased jobsite safety

Shorter hands-on installation time
 Decreased exposure to injury
 Less variables – decreased chance for something to go wrong









