

CRCA 2015 Trade Show & Seminars

“Be Prepared – Change Continues”

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“Roofing Week in Chicago”

CRCA - 2015

CRCA Roofing Industry Breakfast

Presenter:

Matt Dupuis PhD PE
SRI Middleton, WI

January 22, 2015

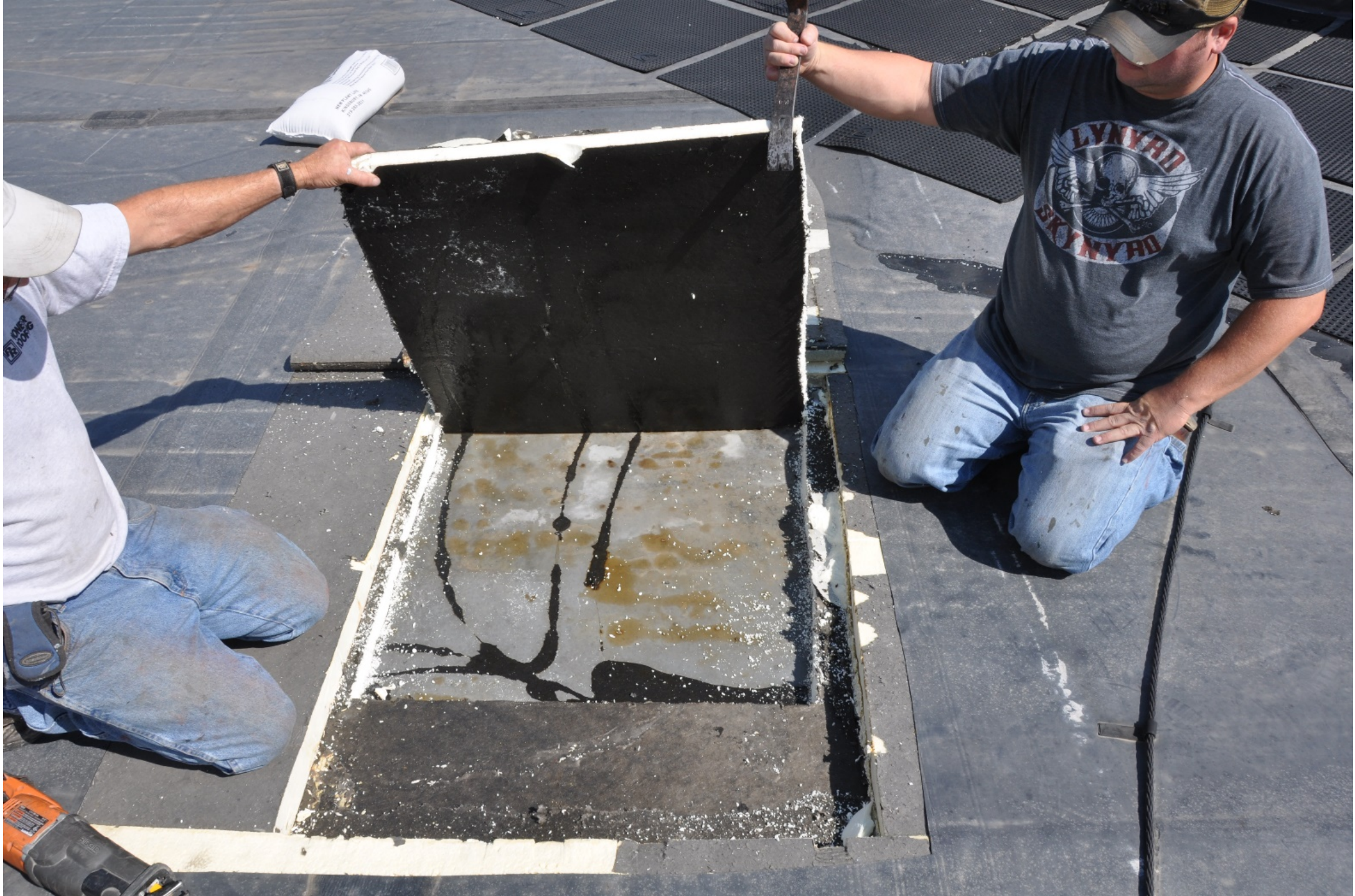
Drury Lanes Conference Center

Topics

- Problems seen in National Roofing Industry
 - Moisture Issues
 - Water based Adhesives
 - Steel Decks
 - Lost Knowledge
- Research
 - Water Based Adhesives
 - Insulation Facers
 - TPO

Moisture Issues

- Concrete Roof Decks
 - Regular Weight Structural Concrete
 - Light Weight Structural Concrete
- Question is when is it safe to roof over?
- Is Light Weight Structural Concrete ever safe?









Moisture Issues

- Concrete Roof Decks
 - Light Weight Structural Concrete is a good portion of trouble/forensic calls SRI has received in the past year
 - Regular Weight Structural Concrete has also been a problem in both new construction and occasionally reroof situations
 - A lot more information on this in Tomorrow's Session
 - *Tomorrow 9:30-10:30 am – "Structural Lightweight Concrete and Roofs"*
- Air Leakage
 - Most underestimated source of moisture entry into a roof
 - Works both ways

Water Based Adhesives (WBA)

- Use by contractors and product development by manufacturers driven by environmental regulation
 - LEED
 - Green Building
- General problem is development, testing and certifications conducted under ideal conditions
 - Field installation conditions vary widely from ideal
 - WBA Sensitive to storage
 - WBA sensitive to ambient conditions for bond development
 - Reintroduction of moisture can and routinely does degrade adhesive bond
 - Less tolerant, to almost everything in every way, compared to legacy solvent based adhesives



Steel Decks

- Several forensic investigations and technical committee issues (TOC and T&R) have revealed an issue with design, capacity and installation of steel roof decks
 - ASCE (American Society of Civil Engineers)
 - FM (Factory Mutual)
 - SDI (Steel Deck Institute)

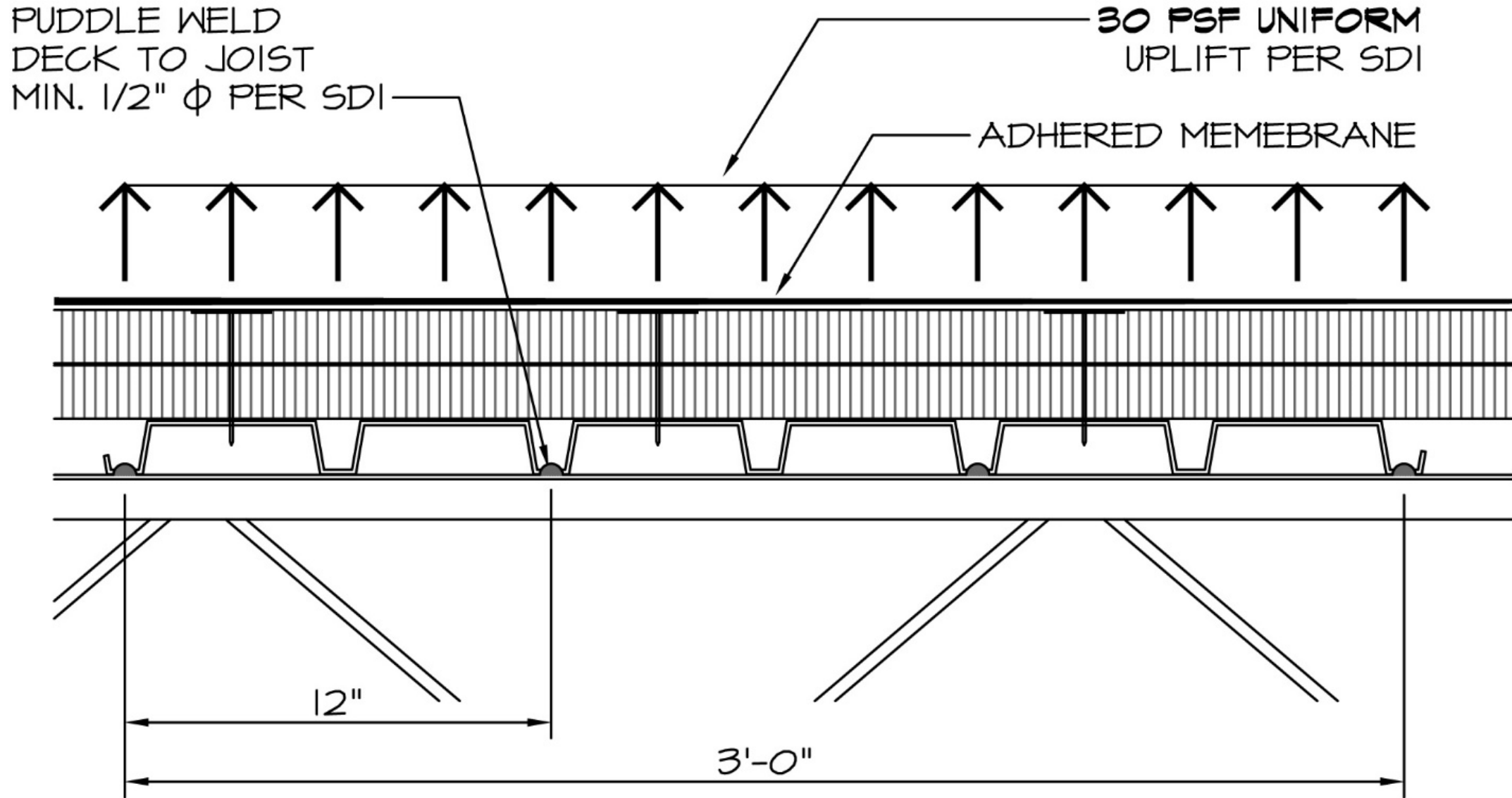


FIG. 1 - UNIFORM WIND UPLIFT LOAD PER SDI
 FOR A 3' WIDE DECKING SECTION

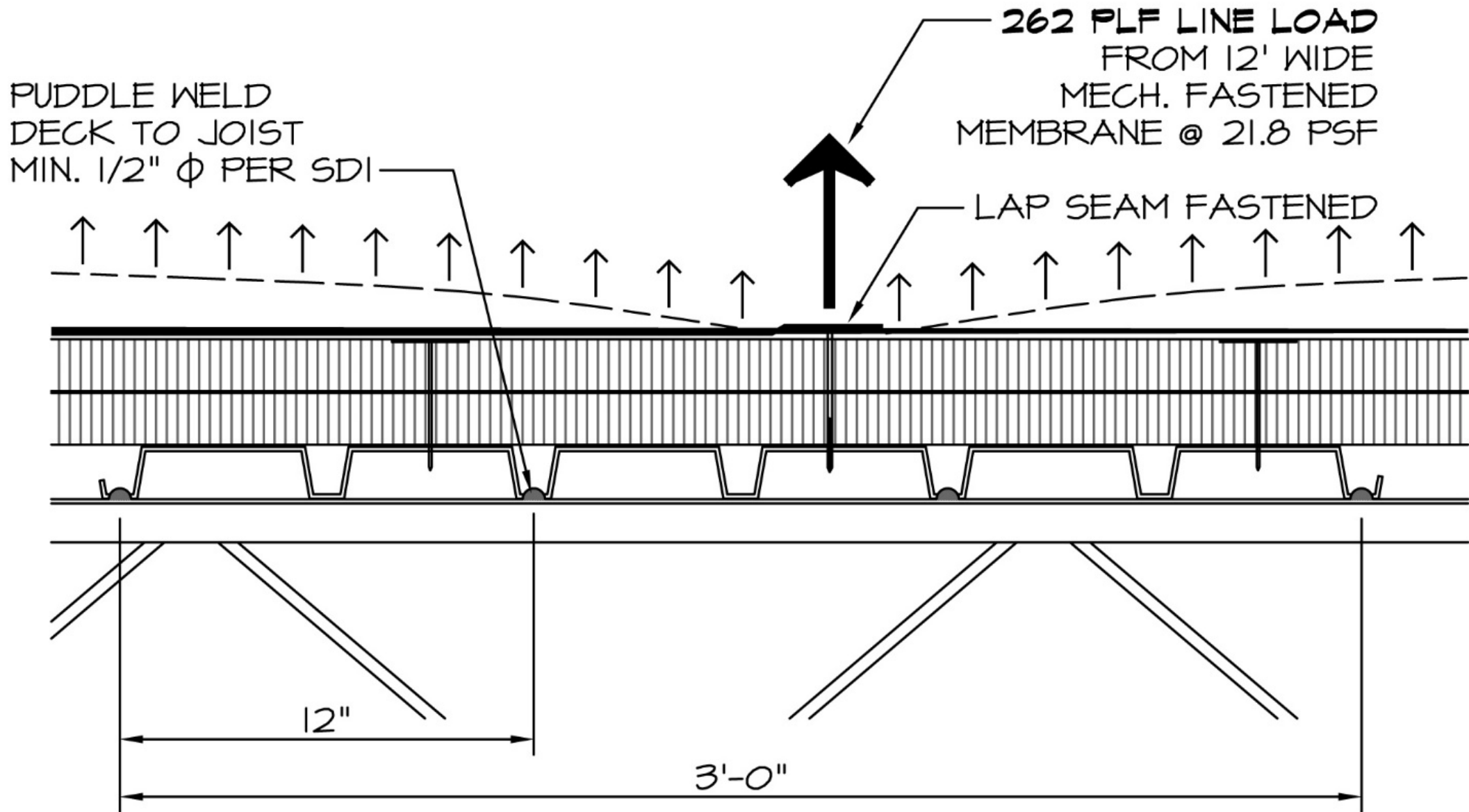


FIG. 2 - LINEAR UPLIFT LOAD ON
MECH. FASTENED 12' SHEET @ 21.8 PSF PER EXAMPLE

Steel Decks

- Need in construction industry to align ASCE, FM and SDI
- More to come on this issue
- Reading
 - August 2014 Midwest Roofer magazine – R Dupuis

Lost Knowledge

- Lack of knowledge transfer from generation to generation
 - Younger roofers have little to no knowledge of Built-Up-Roofing
- Companies may still have hot work equipment but no knowledgeable workers to run it
- Less than 20% of NRCA membership has ability to do hot work
 - Consider in 1980 this was probably 100%
- This is an evolution of the industry
 - Just don't think younger workers can be handed a mop and lugger and know what to do and how to do it

Research

- Water Based Adhesives
- Insulation Facers
 - **Today 1:00 - 2:15 pm, " Research: Roof Insulation Facers & Water Based Adhesives" *Matt Dupuis & Rene Dupuis, SRI***
- TPO

Thank You

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