

Introduction Rocky Mountain Steel Construction Association



Steel Fabricators of New England (SFNE)
Spring Dinner Meeting

Presentation

- RMSCA Bylaws and Organization
- RMSCA Membership and Leadership Structure
- RMSCA Activities and Accomplishments
- Discussion



Membership

- Any individual, firm or corporation having an interest in the use of structural steel as a construction material and who either resides in or has as its principal place of business the Rocky Mountain Region of the United States is eligible for membership.
- Prospective members apply to and approved by the Board of Directors.
- The Board may expel members deemed to have violated the regulations of the association (has never happened).



Objectives

- To promote and expand the use of structural steel in the Rocky Mountain region of the United States
- To bring closer in touch those persons with an interest in the use of structural steel as a construction material
- To disseminate accurate and reliable information regarding the use of structural steel.
- To encourage development and adherence to appropriate standards
- To work cooperatively with AISC and other industry groups.



Membership- Companies

- Fabricators (23) (some Fab and Erect)
- Erectors (3) (Erect only)
- Steel Warehouses (3)
- Other Suppliers (20), grating, galvanizers, paint, bolts, etc.
- Engineering Companies (5)

No associate members one grade of membership



Board of Directors

Current Makeup

9 members (2 year rotating terms)

Background includes: Fabricators, Engineers, Erectors, Suppliers.

The Board elects the officers.

Current leadership:

◦President = Fabricator

◦Vice President = Erector



Presidents / Past Presidents

Last 20 years Presidents Background

Five Fabricators 10 years

Two Engineers 4 years

Two Suppliers 4 years

One Erector 2 years

RMSCA GENERAL ACTIVITIES

MEMBERS DINNER MEETINGS (MEMBERS ONLY):

- Three per year.
 - Contractor engage session.
 - Engineer engage session.
 - One "Power point" Presentation annually (aligns with the annual business meeting)

GOLF OUTING

Maintain a website

RMSCA GENERAL ACTIVITIES

ENGINEERS BREAKFAST MEETINGS (INVITE ANY ENGINEERS THAT WISH TO ATTEND):

- Three per year.
 - Includes an annual joint meeting between RMSCA and SEAC. RMSCA will either sponsor a speaker or the RMSCA/SEAC LIASON COMMITTEE will present their work.

RMSCA EDUCATION COMMITTEE

Sponsors sending local professors to NASCC annually (3-5)

Sponsors an annual scholarship

Supports local students efforts in the steel bridge competition

- \$ from the organization.
- Shop time from fabricators.

RMSCA EDUCATION COMMITTEE

Volunteer sub-committee comprised of fabricators, engineers, erectors, detailers.

Worked with Front Range Community College to develop an associates degree (AS) program in construction technology (Detailing).

Fabricators met with the faculty

AISC provided detailing instructional materials

Software vendor provided licenses for computer software

Local detailers and engineers agreed to teach courses

Built a connection sculpture

RMSCA SEAC LIAISON COMMITTEE

Joint volunteer committee comprised of fabricators, engineers, erectors, detailers.

Take on issues of mutual interest and develop white papers and presentations for the benefit of our local industry.

Papers are typically presented at SEAC meetings and often at the NASCC

Are able to take on issues that would be difficult to discuss inside of a project setting.

Provides an opportunity to develop relationships with industry partners.

Participating Members of the Committee Liaison

Ben Cook, P.E., S.E., Wiss, Janney, Elstner Associates, Inc.
Christopher Dunbar, P.E., Building Consultants & Engineers, Inc.
Dave Henley, P.E., Vulcraft
Richard Huddleston, RK Specialties
Robert Leberer, P.E., S.E., Anderson & Hastings Consultants, Inc.
Patrick McManus, P.E., S.E., Martin/Martin, Inc.
Richard A. Pelletier, SNS Iron Works Inc.
Tom Skinner, P.E., JVA Consulting Engineers
Tim Snyder, Zimkor, LLC
Maynard Trostel, P.E., Puma Steel
Jules Van de Pas, P.E., S.E., Computerized Structural Design
David Weaver, P.E., Zimmerman Metals, Inc.
Bruce Wolfe, P.E., Structural Consultants, Inc. (Chairman)
Bill Zimmerman, P.E.



RMSCA SEAC LIAISON COMMITTEE

Publications:

Structural Drawings Checklist (2000)
AESS – (2001) SEAC, NASCC Presentation, Published MSC
Structural Steel Pre Detailing Agenda (2002, 2010)
OSHA Subpart R Issues (2003)
AISC Qualifications Certification
Exterior Wall Interface Issues (2005) SEAC, NASCC Presentation

RMSCA SEAC LIAISON COMMITTEE

Publications:

Suggestions for Improving the Structural Steel Shop Drawing Process (2006) SEAC, NASCC Presentation
Considerations for Steel Framed Floors (2008) SEAC, NASCC Presentation
Structural Steel Specifications SEAC Presentation
Complex Sloping Steel Roof Issues (2011) SEAC, NASCC Presentation
Lateral Resistive Systems (2012) SEAC Presentation
Welding Inspections (2013) SEAC Presentation

Developed in 2001
 Published in MSC in 2003
 Served as a basis for the CISC AESS

AESS

- INCLUDED A SAMPLE BOARD
- DEVELOPED QUALITY CATEGORIES BASED ON AESS PROXIMITY TO OCCUPANTS
- POINT BY POINT ADDRESSES ISSUES SUCH AS
 - WELDS CONTOURED AND BLENDED
 - MINIMIZING TOLERANCES
 - FIELD WELDING AIDS REMOVED?
 - GRINDING WELDS
 - SHOP MARKS
 - MILL MARKS
 - COATINGS
- COST MATRIX (% value increase)

CONSIDERATIONS FOR STEEL FRAMED FLOORS

Talked with

- Owners Reps
- GC/CM Project Managers
- Fabricators, Erectors, Detailers, Engineers

To get their viewpoint on what makes “a good steel framed floor”

Each of the participants carry unique perspectives that may not be obvious to other members of the team.

Developed a presentation of our findings.

CONSIDERATIONS FOR STEEL FRAMED FLOORS

Code Conformance (adequate strength, fire rating)

Serviceability (deflections, vibration)

Constructability (flatness)

Economy

CONSIDERATIONS FOR STEEL FRAMED FLOORS

Developed Recommendations for

Camber

Framing orientation

Deck usage

Typical openings

Edge framing

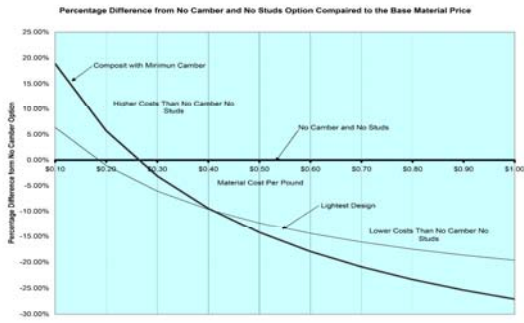
CONSIDERATIONS FOR STEEL FRAMED FLOORS

Composite Floor Decks (Galvanized Finish)

Use 1.5VL 22 gage deck as basis

| Type | Gage | Cost Index |
|--------|------|------------|
| 1.5VL | 22 | 1.00 |
| 1.5VL | 20 | 1.19 |
| 1.5VL | 18 | 1.57 |
| 2.0VLI | 22 | 1.02 |
| 2.0VLI | 20 | 1.22 |
| 2.0VLI | 18 | 1.57 |
| 2.0VLI | 16 | 1.95 |
| 3.0VLI | 22 | 1.08 |
| 3.0VLI | 20 | 1.29 |
| 3.0VLI | 18 | 1.68 |
| 3.0VLI | 16 | 2.09 |

STEEL FRAMED FLOORS



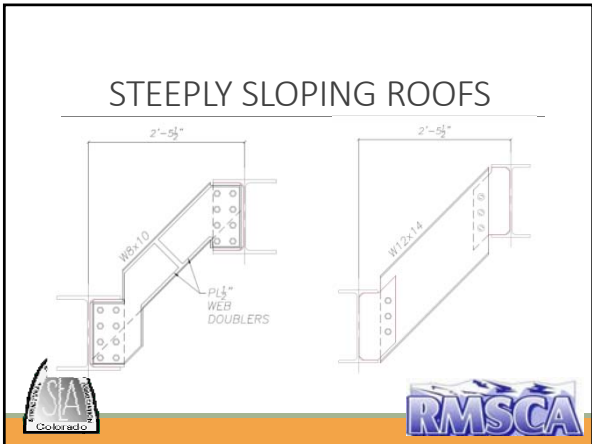
STEEPLY SLOPING ROOFS



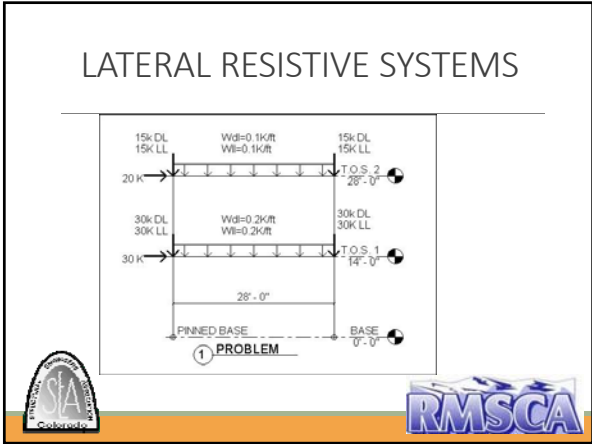
STEEPLY SLOPING ROOFS



- Dimensioning of Drawings
- Defining Framing Conditions Sections & Details
- Required Deck Support and Design
- Open Web Steel Joists
- Steel Connections
- Snow Guards & Tie-offs
- Pre-Detailing Meetings
- An Erector's Perspective







LATERAL RESISTIVE SYSTEMS

| Option # | Description | Relative Cost |
|----------|-----------------------------------|---------------|
| 2.2 | Two-tier angle X-brace bolted | 1.00 |
| 2.2 | Two-tier angle X-brace welded | 1.04 |
| 4.1 | Super diagonal wide flange bolted | 1.10 |
| 5 | Single diagonal welded | 1.10 |
| 4.1 | Super diagonal wide flange welded | 1.11 |
| 5 | Single diagonal bolted | 1.14 |
| 3 | Super X bolted | 1.15 |
| 3 | Super X welded | 1.18 |
| 4.2 | Super diagonal HSS welded | 1.21 |
| 1 | Chevron welded | 1.23 |
| 4.2 | Super diagonal HSS bolted | 1.24 |
| 1 | Chevron bolted | 1.28 |
| 2.1 | Tie-Rod X | 1.32 |
| 7 | Joist moment frame bolted | 1.62 |
| 7 | Joist moment frame welded | 1.70 |
| 6 | Moment frame bolted | 2.01 |
| | Moment frame welded | 2.08 |



Weld Inspections in Building Construction: The Process & Challenges



SEAC/RMSCA STEEL
LIAISON COMMITTEE



Inspector: Current Practice Issues



Inspector: Current Practice Issues



Inspector: Current Practice Issues

- Inspector does not receive project documents prior to initial site visit.
- Inspectors are often selected based on bidding of inadequately defined scope of work.
- Welding inspectors are not always consistent in their interpretation of the AWS requirements.
- Inspector is typically unable to state that all required inspections were completed.
- Inconsistent staffing.

RMSCA

Provides an organization for all participants in the structural steel construction process

Active long term participating membership

Active long term interaction with the local engineering community largely through the SEAC/RMSCA Liaison Committee.

Conclusion / Questions/Discussion



Steel Fabricators of New England (SFNE)

Spring Dinner Meeting

THANK YOU
