

Think Safety:

RACKING INSPECTIONS

Presented by: David Ardito

Today's Agenda

- Applicable legislation
- Pre-Start Health and Safety Reviews (PSR's)
- MLTSD Requirements
- CSA A344-17 User Guide for Steel Storage Racks
- Racking Inspection Program
- Damage and Deficiency Identification and Reporting



Kitchener Man Killed in Collapse - 2015



- 53 year-old man killed
- Rack holding tile and cement bags collapsed while the man was walking out for break
- Worker was trapped underneath
- No specific known cause



Why would the rack just collapse out of nowhere?

Considerations

- Who inspects your racking systems?
- Have they been trained in what to look for?
- Do they know what they're looking for?
- How do you know they are competent?
- Do you have procedures in place on how to inspect racking systems?
 - If not, it is recommended



Applicable Legislation – OHSA

- Employers
 - Racking systems are maintained in good condition
 - Racking systems have a PSR completed, where/as required
 - Supervisors, workers and JHSC members are given adequate information, instruction and supervision on the use and inspection of racking systems



Employer Responsibilities

- Employers should provide training on:
 - Loading recommendations
 - Reporting procedures
 - Safe operation of equipment around racking systems
 - Daily inspections of racking systems
 - Additional information as required



Employer Responsibilities

- Employers should ensure
 - Aisles are free of obstructions to prevent collision
 - Lighting is adequate around racking systems
 - Pallets placed on racking systems are in good condition



Applicable Legislation - OHSA

- Supervisors
 - Inspect racking systems as required by the employer
 - Report damage to racking systems
 - Initiate corrective actions
 - Train workers on their responsibilities on inspecting and reporting
 - Ensure racking systems are not overloaded



Applicable Legislation - OHSA

- Workers
 - Inspect racking systems as required by the employer or supervisor
 - Before placing any loads on them
 - Report damage to racking systems to their supervisor immediately
 - Ensure racking systems are not overloaded
 - Be a competent person



Applicable Legislation – Reg 851

- Section **45(b)**
- In summary
 - Proper training for staff required to conduct inspections
 - Proper training for material handling operators
 - Ensure PSR's are performed where/as required
 - Ensure racking systems are not overloaded
 - Proper identification of load limits are in place
 - Procedure in place for reporting and correcting damage
- Section **7 – PSR's – Amendments effective January 1, 2022**



When is a PSR Required?

If a provision of the following table in regulation 851 applies

Item	Circumstance	Applicable Regulation	Exemptions
3	Material, articles, or things are placed or stored on a structure that is a rack or stacking structure.	Clause 45 (b)	A rack or storage structure is designed and tested for use in accordance with current applicable standards.

PSR's

- Not all racking systems require them
- Some companies are not aware of this requirement
- Requirements
 - Before workers can use racking systems, a racking system report must be completed
 - Generally prepared by a professional engineer
- Documents must be accessible onsite



PSR's

- Written report usually includes the following:
 - Details of measures to be taken to comply with relevant provisions of the regulation
 - Report might provide details of measures, which are to be taken before testing is conducted to protect the health and safety of workers
 - Details of the structural adequacy of the equipment, where applicable.



MLTSD Inspections

- Ministry of Labour, Training and Skills Development
- Priority compliance areas focused on:
 - Installation and selection
 - Is a PSR needed?
 - Not required if you have documentation showing the rack was designed and tested to applicable standards (CSA)
 - Proof must be shown to the JHSC or Safety Representative
 - Condition, Maintenance, and Repair
 - Use of Racks
 - Forklift Activity
- OHSA and regulatory contraventions will be enforced



Racking Inspection Program

- Employers need to have one in place
- Should assign responsibilities to applicable parties
- Should include a training element
- The program should be written
- Should outline routine inspections
- Should include a comparison of the racking system to the drawings, where applicable
- Should outline responsive actions to be taken when deficiencies are identified based on priority level



Racking Inspection Program

- **A - High Priority**
 - A loaded rack has the potential to collapse and cause damage and/or severe injury
- **B - Medium Priority**
 - Observed deficiencies that require attention but should not cause collapse or injury
- **C - Low Priority**
 - Damage considered minor for the structural integrity of the system

YOUR PROGRAM MUST DEFINE WHAT THESE MEAN

Racking Inspection Program

- CSA A344-17 recommends a program that includes:
 - Employer monthly inspection
 - Material handling operator inspection
 - JHSC/Safety Rep monthly inspection
 - Expert annual inspections



Employer Inspections

- Remember OHSA Section 25(1)(b)
 - Must be maintained in good condition
- Can be completed by Supervisors or Managers on behalf of the employer
- Should examine storage of materials and overall condition of racking systems
- Should be documented



Material Handling Operator Inspections

- Make sure the racking can support the weight of the load
 - Know the weight of the load
 - Know the capacity of the racking (should be labelled)
- Visually inspect for damage prior to placing load
- Report damage/concerns to supervisor ASAP



JHSC/Safety Rep Monthly Inspection

- More detailed than material handling operators
- Included as part of the required monthly inspection
- Should be documented
- Look for:
 - Rearranged beams
 - Changed load of stored goods
 - Damage accumulation

Changes between original and current design may require a new PSR – so look at design documents as well

Racking Inspections

- Identified deficiencies must be documented and reported ASAP
- Deficient racking systems or sections **MUST** be taken out of service based on their assigned priority
 - Must be tagged
 - Suggest tape across affected sections
 - Must have load(s) removed
 - Must be communicated to all affected workers



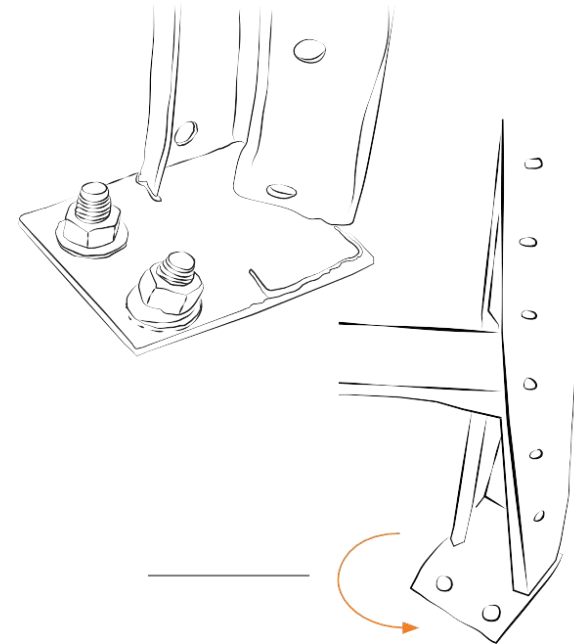
Assessing Racking Damages

- To determine if a deflection should be addressed, use the 1-2-3 rule
 1. Over 1/8" of frontal deflection on an upright, within a span of 36"
 2. Over 1/4" of lateral deflection on an upright, within a span of 36"
 3. Over 3/8" of deflection on a brace
- Other damage such as:
 - Dents, cracks, bulges, pinched columns and corrosion
- Damage hidden behind beam connectors
- Missing or detached braces



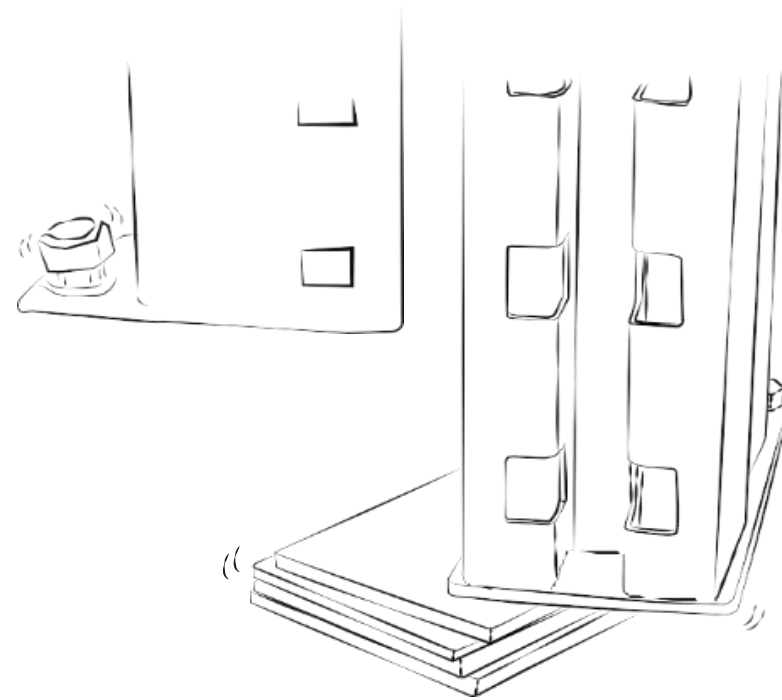
Assessing Racking Damages

- Columns sheared from footplates



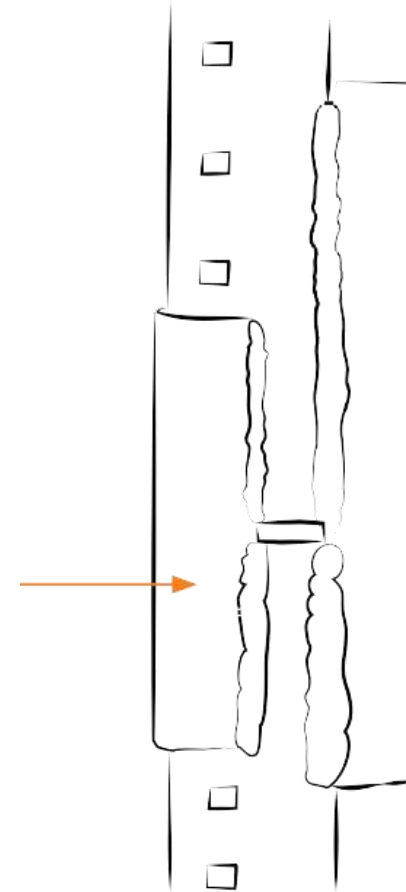
Assessing Racking Damages

- Damaged anchors or footplates



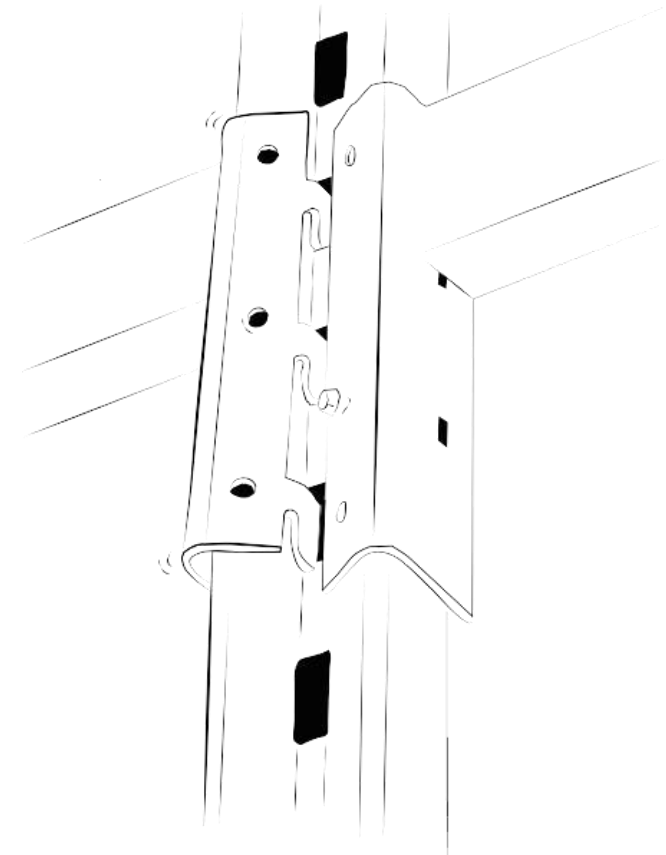
Assessing Racking Damages

- Welded repairs



Assessing Racking Damages

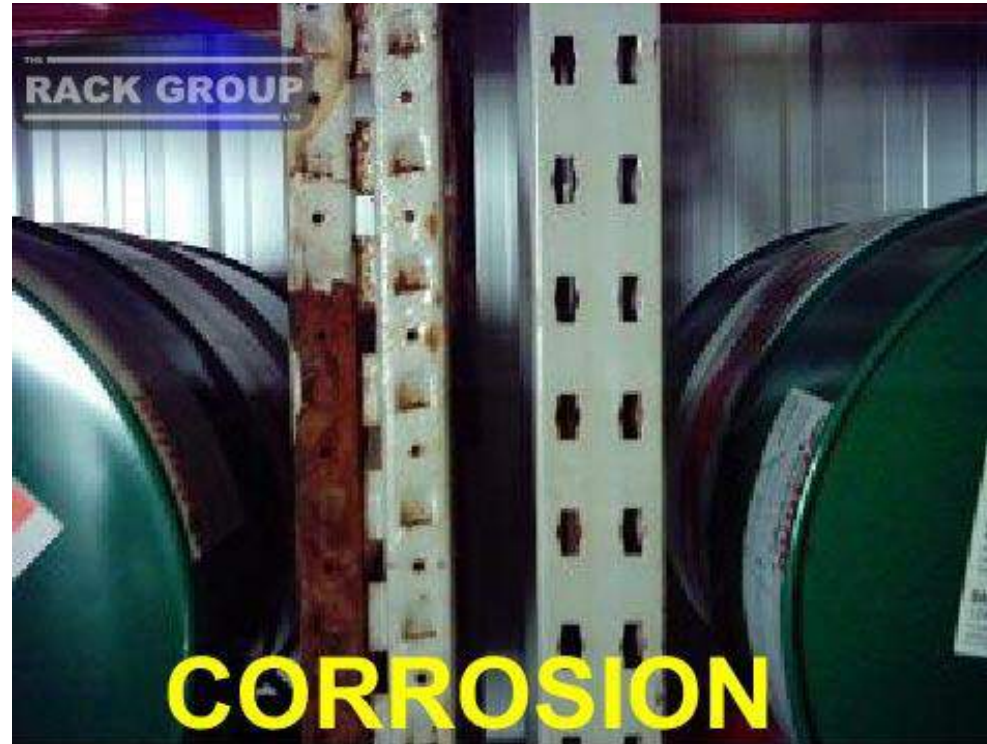
- Safety pins installed correctly



Assessing Racking Damages



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Assessing Racking Damages



Corrective Actions

- Repair or replace – which will it be?
- Replacement can come with a potential high cost
- Repair can be cheaper, but must be done right
- Only a competent person should repair racking systems



idea → plan → action

Cautions

- One faulty rack section on the brink of collapse can cause a domino effect of the entire system
 - Be sure not to overlook any component
- Be cautious of purchasing used racking
 - Often, used racking comes with deficiencies
 - Doesn't mean they're all bad
 - If you do, buy it from a reputable reseller
 - Make sure you have a PSR completed
 - Review the install to ensure it is done correctly, and as per the PSR requirements
 - Ensure load ratings are indicated on the racking beams



Cautions

- Remember:
 - Simply relocating the height of a beam can compromise the structural integrity of the racking system
 - ANY modifications to be made must be done so in line with the current PSR, or have a new PSR completed prior to first use



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Any Questions?

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THANK YOU FOR ATTENDING TODAY!