Safety Manual Rigging – Material Handling

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Rigging – Material Handling

1 **Purpose and Scope:**

- 1.1 Therma shall insure that all rigging and material handling equipment are properly safe and used in accordance with the manufacturer's guidelines and compliant with OSHA standard 1926.251 and 1910.184.
- 1.2 The use of any rigging / material handling equipment not in compliant with any portion of this policy is prohibited.
- 1.3 Rigging materials and equipment for overhead crane lift operations shall be performed by a designated / qualified rigger.

2 Responsibility:

- 2.1 It is the responsibility of all supervisors to ensure employees involved in rigging / material handling are trained and are in compliant with the requirements of this policy.
- 2.2 It is the responsibility of all employees involved in rigging / material handling to follow the requirements of this policy.

3 Policy:

3.1 Inspections:

- 3.1.1 Initial inspections, before any new equipment is placed into service shall be inspected by a designated / qualified person
- 3.1.2 Rigging equipment shall be inspected by a qualified person prior to each use on each shift and as necessary during its use to ensure it is safe.
- 3.1.3 Defective or damaged rigging equipment, including slings and hooks, shall be removed from service immediately.
- 3.1.4 Rigging equipment shall be marked with the rated load. Without such marking, the equipment shall be removed from service.

3.2 Use-General:

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3.2.1 Slir mal	Slings shall not be shortened with knots, bolts, or other makeshift devices.		
3.2.2 Slin Ioad	Slings, chains or similar devices shall not be shock loaded or loaded in excess of their rated capacities.		
3.2.3 Slir	Slings shall be set to avoid slippage.		
3.2.4 Slir pre	Slings used in a basket hitch shall have the loads balanced to prevent slippage.		
3.2.5 Slir the	Slings shall be padded or protected from the sharp edges of their loads.		
3.2.6 Rig imn em	Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.		
3.2.7 Tag crea	Tag lines shall be used when lifting loads unless such use creates an unsafe condition.		
3.2.8 Sus	Suspended loads shall be kept clear of all obstructions.		
3.2.9 Und sus	Under no conditions shall an employee be allowed under a suspended load.		
3.2.10 Hoo atta elin	bks on ball assemblies, lower lo chments shall be of a type that ninating the "hook throat openir	bad blocks, or other t can be closed and locked, ng".	
3.2.11 Har load	nds or fingers shall not be place d while the sling is being tighter	ed between the sling and its ned around the load.	
3.2.12 A s res	ling shall not be pulled from un ting on the sling and damage to	der a load when the load is the sling may result.	
. Synthetic Slings:	ang on the sning and damage to	The sing may result.	

- 4.1 Synthetic Slings must be taken out of service if any of the following effects are noted.
 - 4.1.1 Missing or illegible sling identification.
 - 4.1.2 Acid / caustic burns.
 - 4.1.3 Evidence of melting / charring.
 - 4.1.4 Cuts / tears that expose core yarns.
 - 4.1.5 Stretch or elongation exceeding the amount recommended by manufacturers.
 - 4.1.6 Knots in any part.

5. Chain Sling:

- 5.1 Chain slings must be removed from service if any of the following defects are noted.
 - 5.1.1 Links / Rings / Hooks nicks, cracks, gouges, excessive wear, bent links, stretched links, heat damage, rust or corrosion.

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- 5.1.2 Uneven lengths when sling legs are hanging free.
- 5.1.3 Individual link must hinge freely with adjoining link.
- 5.14 Deformed master links or coupling links.
- 5.2 Chain slings must be made from grade 80 and 100 alloy chain and tested in accordance with NACM specs 1990.
- 5.3 Annealing or normalizing shall be done only in accordance with the chain manufacturer's specifications
- 5.4 Only chains recommended for slinging or hoisting by the manufacturer, shall be used for hoisting purposes. Proof coil steel chains shall not be used.
- 5.5 Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding 6 months when recommended by the manufacturer.

6. Hooks and Shackles:

- 6.1 Hooks and shackles shall only be used in accordance with the manufacturer's recommendation
- 6.2 Hooks that do not have an identified manufacturer recommendation shall be tested at twice the intended safe working load to determine their quality before being put to use.
- 6.3 Remove from service if there is any evidence of stretching or cracks.
- 6.4 Do not attempt to straighten deformed hooks, shackles, or other attachments.
- 6.5 Deformed hooks or rings shall be replaced or repaired and reshaped under proper metallurgical control and proof tested.
- 6.6 The use of "homemade" hooks, shackles or other makeshift fasteners is prohibited.
- 6.7 Shackle pins must fit freely, without binding, and seat properly.

7. Eyebolts:

7.1 Eyebolts used for hoisting must be fabricated from forged carbon or alloy steel.

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- 7.2 Carbon steel eyebolts must have the manufacturer's name or identification trademark forged in raised characters on the surface of the eyebolt.
- 7.3 Alloy steel eyebolts must have the symbol "A" (denoting alloy steel) and the manufacturer's name or identification mark forged in raised characters on the surface of the eyebolt.
- 7.4 Carefully inspect each eyebolt before use.
 - 7.4.1 Visually inspect the hole to ensure that there has been no deformation.
 - 7.4.2 Check the condition of the threads in the hole to ensure that the eyebolt will secure and the shoulder can be brought down snug.
 - 7.4.3 Ensure that the shank of the eyebolt is not undercut and is smoothly radiused into the plane of the shoulder or the contour of the ring for non-shouldered eyebolts.
- 7.5 Destroy and discard eyebolts that are cracked, bent, or have damaged threads.