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## 29 C.F.R. § 1910.184

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### Slings.

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(a) *Scope.* This section applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting, in employments covered by this part. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).

(b) *Definitions.* *Angle of loading* is the inclination of a leg or branch of a sling measured from the horizontal or vertical plane as shown in Fig. N-184-5; provided that an angle of loading of five degrees or less from the vertical may be considered a vertical angle of loading.

*Basket hitch* is a sling configuration whereby the sling is passed under the load and has both ends, end attachments, eyes or handles on the hook or a single master link.

*Braided wire rope* is a wire rope formed by plaiting component wire ropes.

*Bridle wire rope sling* is a sling composed of multiple wire rope legs with the top ends gathered in a fitting that goes over the lifting hook.

*Cable laid endless sling-mechanical joint* is a wire rope sling made endless by joining the ends of a single length of cable laid rope with one or more metallic fittings.

*Cable laid grommet-hand tucked* is an endless wire rope sling made from one length of rope wrapped six times around a core formed by hand tucking the ends of the rope inside the six wraps.

*Cable laid rope* is a wire rope composed of six wire ropes wrapped around a fiber or wire rope core.

*Cable laid rope sling-mechanical joint* is a wire rope sling made from a cable laid rope with eyes fabricated by pressing or swaging one or more metal sleeves over the rope junction.

*Choker hitch* is a sling configuration with one end of the sling passing under the load and through an end attachment, handle or eye on the other end of the sling.

*Coating* is an elastomer or other suitable material applied to a sling or to a sling component to impart desirable properties.

*Cross rod* is a wire used to join spirals of metal mesh to form a complete fabric. (See Fig. N-184-2.)

*Designated* means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

*Equivalent entity* is a person or organization (including an employer) which, by possession of equipment, technical knowledge and skills, can perform with equal competence the same repairs and tests as the person or

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organization with which it is equated.

*Fabric (metal mesh)* is the flexible portion of a metal mesh sling consisting of a series of transverse coils and cross rods.

*Female handle (choker)* is a handle with a handle eye and a slot of such dimension as to permit passage of a male handle thereby allowing the use of a metal mesh sling in a choker hitch. (See Fig. N-184-1.)

*Handle* is a terminal fitting to which metal mesh fabric is attached. (See Fig. N-184-1.)

*Handle eye* is an opening in a handle of a metal mesh sling shaped to accept a hook, shackle or other lifting device. (See Fig. N-184-1.)

*Hitch* is a sling configuration whereby the sling is fastened to an object or load, either directly to it or around it.

*Link* is a single ring of a chain.

*Male handle (triangle)* is a handle with a handle eye.

*Master coupling link* is an alloy steel welded coupling link used as an intermediate link to join alloy steel chain to master links. (See Fig. N-184-3.)

*Master link or gathering ring* is a forged or welded steel link used to support all members (legs) of an alloy steel chain sling or wire rope sling. (See Fig. N-184-3.)

*Mechanical coupling link* is a nonwelded, mechanically closed steel link used to attach master links, hooks, etc., to alloy steel chain.

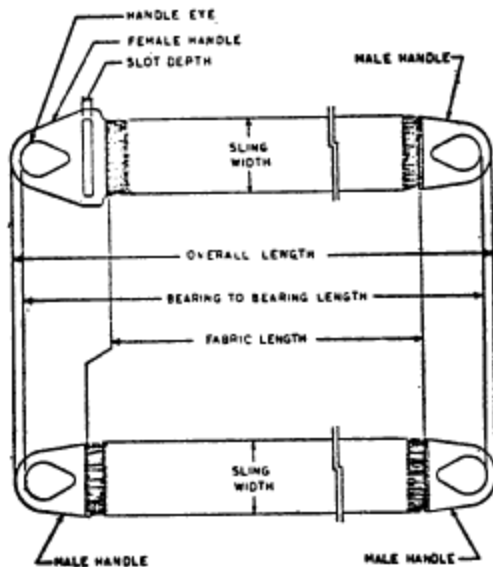


FIG. N-184-1  
Metal Mesh Sling (Typical)

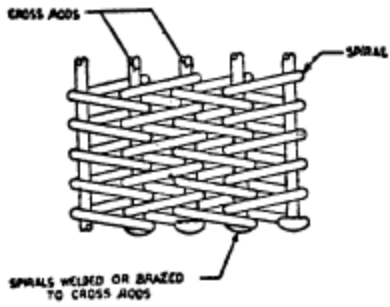


FIG. N-184-2  
Metal Mesh Construction

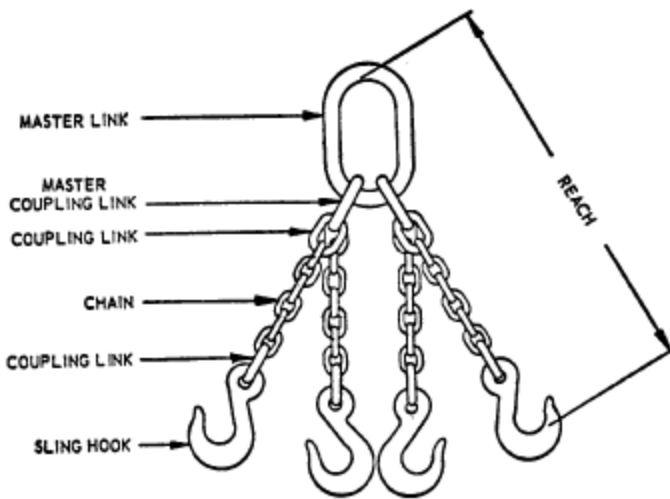
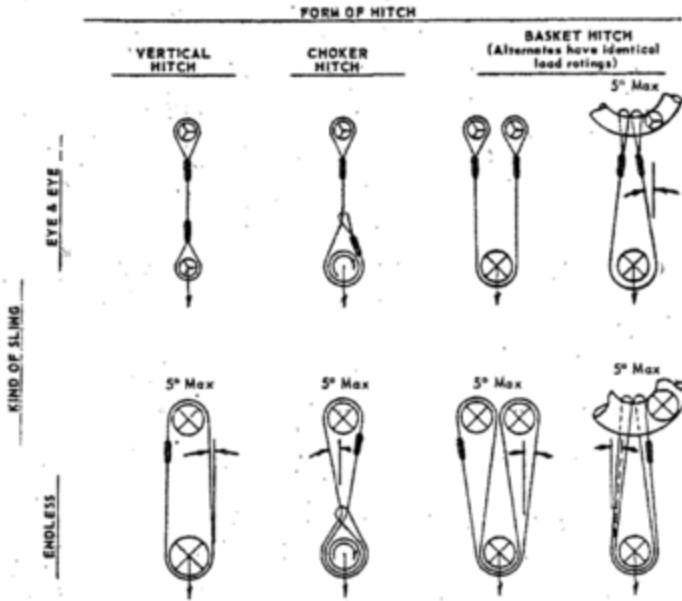


FIG. N-184-3 MAJOR COMPONENTS OF A QUADRUPLE SLING.

FIGURE N-184-4

Basic Sling Configurations  
with Vertical Legs



NOTES: Angles 5° or less from the vertical may be considered vertical angles.

For slings with legs more than 5° off vertical, the actual angle as shown in Figure N-184-5 must be considered.

EXPLANATION OF SYMBOLS: MINIMUM DIAMETER OF CURVATURE




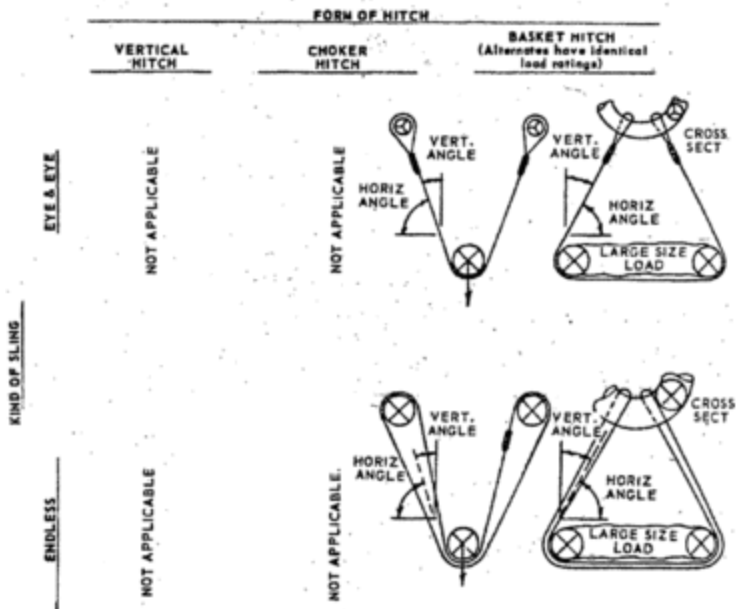
-  Represents a contact surface which shall have a diameter of curvature at least double the diameter of the rope from which the sling is made.
-  Represents a contact surface which shall have a diameter of curvature at least 8 times the diameter of the rope.
-  Represents a load in a choker hitch and illustrates the rotary force on the load and/or the slippage of the rope in contact with the load. Diameter of curvature of load surface shall be at least double the diameter of the rope.

FIGURE N-1B4-5  
Sling Configurations  
with Angled Legs



NOTES: For vertical angles of 5° or less, refer to Figure N-1B4-4 "Basic Sling Configurations with Vertical Legs".

See Figure N-1B4-4 for explanation of symbols.

*Proof load* is the load applied in performance of a proof test.

*Proof test* is a nondestructive tension test performed by the sling manufacturer or an equivalent entity to verify construction and workmanship of a sling.

*Rated capacity* or *working load limit* is the maximum working load permitted by the provisions of this section.

*Reach* is the effective length of an alloy steel chain sling measured from the top bearing surface of the upper terminal component to the bottom bearing surface of the lower terminal component.

*Selvage edge* is the finished edge of synthetic webbing designed to prevent unraveling.

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