

SAFE WORK PRACTICE



TITLE	REBAR, Tying
GENERAL	Construction, Tools, WHMIS, Worksite.
APPLICATION	Construction personnel and any other workers or operations that may be affected at the worksite or facility.
PROTECTIVE MECHANISMS	Steel Toed Boots, Protective Eyewear (Face shield may be required depending on task (ex: use of grinder, quick cut), Protective Gloves (heavy-duty leather), High-Vis Vest, Long sleeves/long pants, Hard Hat. Respiratory Protection may be required depending on task (ex: concrete dust from dry cutting concrete). If working at heights, Fall Protection is required.
SELECTION AND USE	<p><u>Pre-Job Safety Procedure</u></p> <ul style="list-style-type: none"> • Attend daily site meetings and safety meetings as necessary. • Review and understand daily tasks. • Obtain Safe Work Permit/Hot Work Permit as required. • Ensure safety equipment is readily available (ex: fire extinguisher, etc.) • Know how to properly select, use, and maintain PPE and safety equipment. <p><u>Tools and Supplies</u></p> <ol style="list-style-type: none"> 1. <u>QUICK CUT SAW</u> (portable circular cut-off saw) used for cutting concrete, masonry products, etc.). Wear all required PPE including safety eye/face protection, hearing protection, steel-toed boots, tight-fitting protective clothing, etc.). Ensure you know and understand the hazards of the tool (ex: kickback or pull-in, inappropriate disks, and blades for the operation, etc.). Refer to the owner’s manual and guide for use, inspection, and maintenance of the tool. Obtain and document training in its use from your supervisor. 2. <u>ANGLE GRINDER</u> (hand tool use to cut through rebar with a cut-off wheel specifically designed for use with metal). Wear all required PPE including safety eye/face protection, hearing protection, steel-toed boots, protective clothing, etc.). Ensure you know and understand the hazards of the tool (ex: high speed flying particles, inhaling dust/fume, kickback, electrical shock, etc.). Refer to the owner’s manual and guide for use, inspection, and maintenance of the tool. 3. <u>REBAR SAFETY END CAP</u> (bright orange or yellow plastic safety caps). Use these to mark the ends of exposed rebar to prevent injury from cuts/scrapes, punctures, etc. 4. <u>REBAR TIE WIRE</u> wraps around the intersections of the rebar to prevent it from shifting when the concrete is poured. Tying rebar can pose a variety of hazards including cuts and puncture wounds, slip/trip/fall, etc.). 5. <u>CHAIRS</u>. Plastic chairs may work if the rebar structure is not too weighty, and the end structure will not be subjected to much abuse from the elements. However, concrete blocks ensure the strength and durability of the entire structure. 6. <u>PLIERS</u>. Use pliers for efficient wire tying.

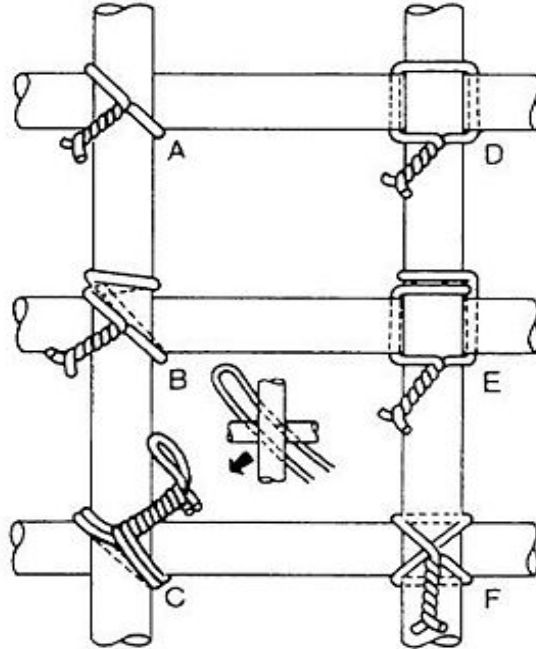


<p>SUPERVISOR RESPONSIBILITY</p>	<ul style="list-style-type: none"> • Ensure workers have adequate training and are competent to perform their tasks. • Provide the appropriate required personal protective and safety equipment. • Provide machinery, equipment, and tools necessary to perform the job safely. • Ensure necessary inspections and maintenance requirements are followed. • Ensure personnel know and follow all safe work practices and procedures. • Ensure rebar is stored off the ground on suitable material to prevent damage.
<p>WORKER RESPONSIBILITY</p>	<p>DO ...</p> <ul style="list-style-type: none"> • Put safety end caps on any exposed rebar to avoid serious injuries. The cut ends of rebar are extremely sharp. • Use the appropriate type of tie to avoid displacing the rebar. • Use chairs to keep the rebar in the correct position—speak to your supervisor. • Routinely pick up scrap rebar to prevent tripping hazards. • Watch for rebar protruding from concrete foundation work. • Tuck in boot strings and pant legs to prevent hang-ups when walking through the working area. • Store rebar off the ground on suitable material to prevent damage. <p>DO NOT ...</p> <ul style="list-style-type: none"> • Place rebar supports too far apart—the rebar will bend in the middle due to its weight. • Handle rebar with multiple pick-up points to minimize sagging. • Drag rebar or treat it roughly to avoid the rebar from swinging back and striking workers. • Do not arc weld rebar (only certain types of rebar stamped “W” can be welded).
<p>SAFE WORK PRACTICE</p>	<ol style="list-style-type: none"> 1. Measure length of rebar and mark. Always wear gloves and eye protection when handling and tying rebar. 2. Know location of fire extinguisher prior to cutting. 3. Complete hot work permits as required. 4. Inspect Quick-Cut Saw or Angle Grinder prior to use (remove from service if any defects are noted). 5. Use quick cut saw or grinder to cut the rebar to the appropriate length. 6. Place rebar as per plan. Speak to your supervisor if you have any questions. 7. Tie the rebar. See next page for Rebar-Tying Methods 8. Chair the rebar and tie lapping rebar together with either zip ties or tie wire. (If available, use a mechanical rebar-tying tool). 9. Use pliers for efficient tying. 10. Pull the feeding end from the wire reel with your non-dominant hand. 11. Grip end of wire with pliers in dominant hand and poke or push it behind the rebar. 12. Bend or angle the end toward the place you will be grabbing the end of then reach from that side. 13. Grip it again with the pliers, pull it toward the next place you will route it to, pulling enough slack wire to complete the tie.



14. Hold resistance on wire with non-dominant hand, so wire bends snugly against the bar you're wrapping in each stage of the tie.
15. Release the wire so the pliers can be used to grip it.
16. Pull the end around the bar and twist the two ends of the wire together.
17. Pull or tug the wire with the pliers so the tie is tight.
18. Cap and vertical rebar stick-out with rebar caps. If caps are not available, bend rebar over or cap it with a 2x4 to protect workers.

TYPES OF TIES FOR CONCRETE REBAR REINFORCEMENT



A SNAP (SIMPLE) TIE: Mostly used on floor slabs, the snap, or simple tie is simply wrapped once around the two crossing bars in a diagonal manner with the two ends on top. The ends are then twisted together with a pair of side cutters until they are very tight against the bars. The loose ends are cut off.

B WALL TIE: Used on light vertical mats of steel, the wall tie is made by taking one and one-half turns around the vertical bar, then one turn diagonally around the intersection. The two ends are twisted together until the connection is tight, then the excess is cut off.

C DOUBLE-STRAND SINGLE TIE: Commonly used for heavy work, the double-strand tie is a variation of the simple tie.

D SADDLE TIE: Used when tying rebar for walls or other vertical applications where rodbuster climbs on the rebar. The wires of the saddle tie pass half-way around one of the bars on either side of the crossing bar and are brought squarely or diagonally around the crossing bar. The ends are then twisted together. Cut the feed wire and bend the cut ends back.

E SADDLE TIE WITH TWIST: Used for heavy mats to be lifted by crane, the saddle tie with twist is a variation of the saddle tie. The tie wire is carried completely around one of the bars, then squarely across and halfway around the other, either side of the crossing bars, and finally brought together and twisted either squarely or diagonally across.

F FIGURE '8' OR CROSS TIE has the advantage of causing little or no twist in the bars. It helps hold perpendicular bars tight while preventing them from racking or moving diagonally. Pull the wire around the rear (from rodbuster) bar, diagonally across the front bar, back around rear bar, diagonally in the opposite direction across the front bar, then twisting back around the beginning wire. Cut wire feeding off reel. Bend cut ends back towards the tie so no sharp ends project from the tie.