



## OPERATOR'S INSTRUCTION MANUAL

**WARNING:** Serious injury may result if this product is misused. The manufacturer provides the following instructions for use and care of this equipment and relies upon the purchaser to see to it that these instructions are made clear to the persons who will actually be using the equipment.



**EQUIPMENT COMPANY**

2601 NIAGARA LANE • MINNEAPOLIS, MN 55447-9855

Phone (763) 553-1935



## SAFETY PRECAUTIONS

1. Rail Guard 200 is designed for use on flat, level surfaces only.
2. Do not set up railings or bases near electrical wires. Keep at least ten feet away from power lines.
3. Check load limit of deck before setting up to make certain the deck is strong enough to support the weight of the railing system and other equipment and personnel.
4. Never use damaged railing, repair or replace damaged railings.
5. Never set up railings without lockpins (P-45).
6. Do not exceed 200 lbs. top rail pressure to railings.
7. Always use 5 ft. outrigger sections at each end of continuous railing set up.
8. Do not use railings for hoisting or anchoring device.
9. Avoid setting up on slippery surfaces.

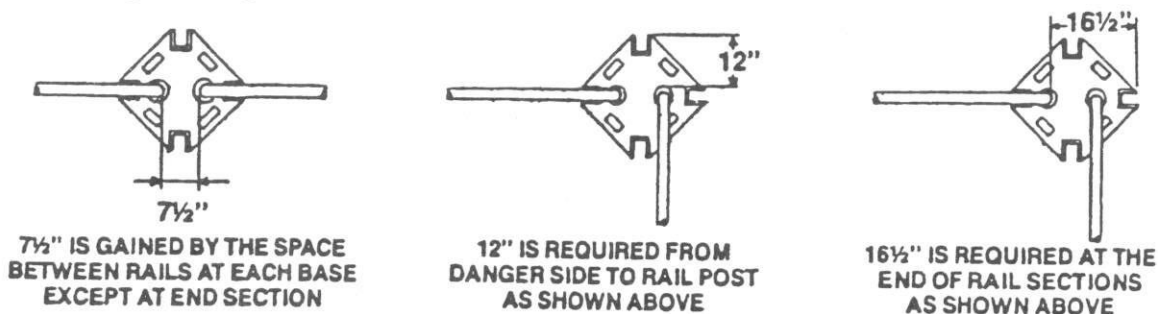
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WE CARE ABOUT YOUR SAFETY
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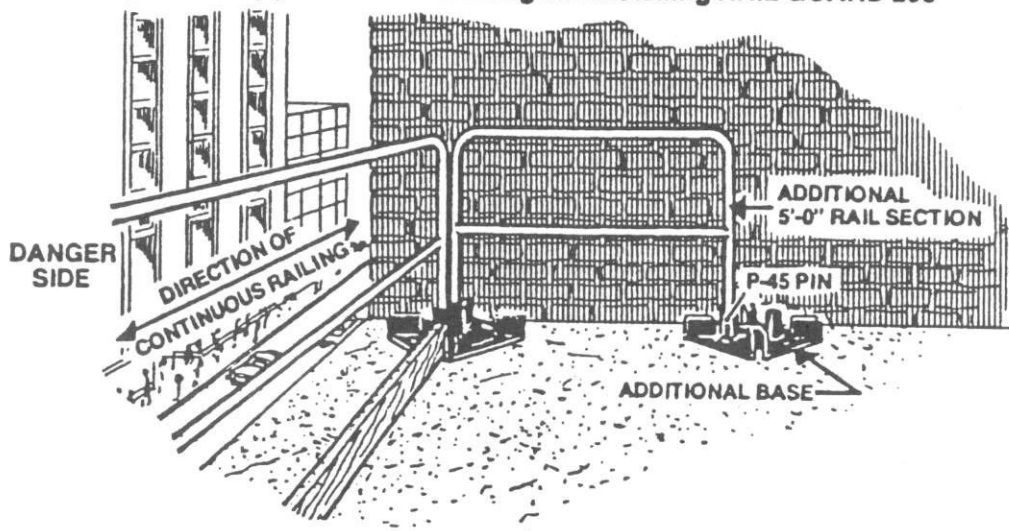
# RAIL GUARD 200™ SAFETY RAILINGS INSTALLATION INSTRUCTIONS

Installation instructions must be followed to comply with Occupational Safety and Health Act, OSHA 1910.23 General Industry Standards and OSHA 1926.500 Construction Safety.

1. Before installation of RAIL GUARD 200™, inspect all parts to insure no damaged parts are used.
2. Check rubber pads on bottom of #1001 Base and replace if necessary.
3. Broom clean surfaces where #1001 Base is to be placed before setting #1001 Base in position.
4. Railings must be secured to Base with 3/8" steel pins (RAIL GUARD 200 P-45 Pin).
5. Where there is danger to personnel below due to falling materials, a removable toe board must be provided. 2"x4" lumber toe boards should be used and secured to base. If toe boards are pre-drilled, P-45 pin may be used. If toe board holes are not drilled, toe board may be secured by nailing.
6. A RAIL GUARD 200 Outrigger assembly must be used at any interruption in continuous railing sections. Outrigger assembly consists of (1) additional #1001 Base and (1) 5'-0" railing section pinned to bases with P-45 Pins, placed 90 degrees away from danger side of continuous railing. See diagram:



Use good safety practices in handling and installing RAIL GUARD 200™



# ROOFING SAFETY

Safety hazards are not always obvious to workers. Unlike exposure to health hazards, where illness or injury develop slowly, safety hazards usually result in immediate injury or death.

Broken bones, cuts, bruises, sprains, burns, and loss of limbs, eyesight and hearing are the kinds of injuries caused by safety hazards.

The rate of occupational injuries in roofing, in fact, ranks in the top ten of all major occupational groups.

## Falls

Falls are the number one cause of serious injury and death to roofers. An estimated 10 percent of all roofing accidents result from falls off roof edges, through roofing openings, or off ladders, more than half of the non-fatal accidents result in serious injury.

Unprotected and unguarded roof edges and roof openings create extremely hazardous conditions.

Ladders with cracked, loose or missing steps; with side rails broken or cracked and not attached firmly to the steps; with broken, loose or missing locks, or coated with grease, oils or hardened bitumen can lead to serious injury. Ladders should always be inspected to make sure they're properly maintained and constructed and that they're long enough to extend three feet above the roof's surface.

Improperly balanced or unstable hoists overturn and will often carry the worker along. Rolls of roofing felt should never be used as counterweight. Workers should know the load capacity; it should be posted.

## Burns

Skin contact with hot asphalt and hot coal tar pitch usually results in second and third degree burns. They usually involve deeper portions of the skin and are easily infected.

An estimated 16 percent of all injuries are burns from hot stuff. The major causes of burns have been from:

- Kettle flashes
- Kettle splashes from dropping pieces of coal pitch or asphalt into the kettle
- Slips and trips while carrying hot bitumen in open containers
- Splashes involving transfer operations like from the hot pipe outlet to a hot lugger, from a hot lugger to a mop cart or a pail, or from the kettle to a pail

## Heavy Lifting

Sprains and strains, a majority of which involve the back, are the most common roofing injury and one of the most severe. Almost 30 percent of these injuries result in 10 or more days away from work.

## Fire/Explosion

Two conditions must be met in order for fires and explosions to occur. First, there must be an ignition source – a welding arc, spark, cigarette, flame or simply a hot spot as in a kettle or tanker. Secondly, there must be the right mixture of vapors (from asphalt, pitch, solvents), and oxygen.

For kettles and tankers, fire/explosion conditions arise when:

- oversized burners are used to fire the kettle, causing localized overheating of the heating tubes creating a hot spot
- the temperature of the bitumen is brought up to the desired operation temperature too quickly
- allowing the level of bitumen to drop to the level of the firing tubes, allowing excessively high surface temperatures
- heating the bitumen to its flash point (for asphalt, about 525° – 540°; for pitch, about 450° – 475°)
- the temperature of the bitumen is hot enough to reach the auto-ignition level
- in tankers, the vent pipe is clogged or plugged so that flammable vapors can build up to explosive levels.

Many solvents evaporate quickly at room temperatures. Explosive mixtures of vapors can be readily formed within confined spaces like high parapet walls, in atriums or in any space where little or no ventilation exists. And any kind of spark or flame can ignite the vapors.

## Electrocution

Low voltage electricity can cause shock, muscle contractions, breathing difficulty, irregular heartbeat, severe burns and death. The route that the current takes through the body affects the degree of injury. Current flowing from one finger to another would not pass vital organs, while from one hand to another would pass through the heart and lungs.

Electrical tools should be properly grounded. The electrical cord should end in a three-prong grounding contact, or the wires should be enclosed in a metal case with a special grounding attachment.

Employers are required to provide ground fault circuit interrupters for all outlets on construction sites that are not part of the permanent wiring of the building. This is actually a fast-acting circuit breaker, which can shut off electricity in a fraction of a second.

Aluminum or other metal ladders pose a serious electrical hazard around electrical equipment and energized lines.

## Falling Objects

Tools, bricks, materials, buckets, boxes, pallets or almost anything dropped from a sufficient height can cause severe damage. Head injuries, one of the highest compensated injuries to workers, often include brain damage.

Workers need protective head gear when working beneath people, tools and equipment.

## Flying Objects

Objects can be projected by machines, from welding or grinding operations and can be windblown. Tear-off operations, where power cutters, power brooms and power spudders are generally used, are the major source of flying substances.

The part of the body most often injured is the eyes.

## Unguarded Machinery

Exposed blades and chains on powered machinery like hoists and roof cutters can severely lacerate and crush parts of the body. Guards should always be fitted over moving parts to protect workers.

## OSHA STANDARDS

### 1926.500 Guardrails, Handrails and Covers.

(g) Guarding of low-pitched roof perimeters during the performance of built-up roofing work.

(1) General Provisions. During the performance of built-up roofing work on low-pitched roofs with a ground to eave height greater than 16 feet (4.9 meters), employees engaged in such work shall be protected from falling from all unprotected sides and edges of the roof as follows:

(i) By the use of a motion-stopping-safety system (MSS system); or

(ii) By the use of a warning line system erected and maintained as provided in paragraph (g) (3) of this section and supplemented for employees working between the warning line and the roof edge by the use of either an MSS system or, where mechanical equipment is not being used or stored, by the use of a safety monitoring system; or

(iii) By the use of a safety monitoring system on roofs fifty feet (15.25 meters) or less in width (see Appendix A), where mechanical equipment is not being used or stored.

(2) Exception. The provisions of paragraph (g) (1) of this section do not apply at points of access such as stairways, ladders, and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof level conditions. Roof edge materials handling areas and materials storage areas shall be guarded as provided in paragraph (g) (5) of this section.

#### (3) Warning Lines.

(i) Warning lines shall be erected around all sides of the work area.

(a) When mechanical equipment is not being used, the warning line shall be erected not less than six feet (1.8 meters) from the roof edge.

(b) When mechanical equipment is being used, the warning line shall be erected not less than six feet (1.8 meters) from the roof edge which is parallel to the direction of mechanical equipment operation and not less than 10 feet (3.1 meters) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

(ii) The warning line shall consist of a rope, wire, or chain, and supporting stanchions erected as follows:

(a) The rope, wire, or chain shall be flagged at not more than six foot (1.8 meters) intervals with high-visibility material;

(b) The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.86 meters) from the roof surface and its highest point is no more than 39 inches (1 meter) from the roof surface;

(c) After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 Newtons) applied horizontally against the stanchion, 30 inches (0.76 meters) above the roof surface, perpendicular to the warning line, and in the direction of the roof edge;

(d) The rope, wire, or chain shall have a minimum tensile strength of 500 pounds (227 Kilograms), and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph (g) (3) (ii) (c) of this section; and

(e) The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

(iii) Access paths shall be erected as follows:

(a) Points of access, materials handling areas and storage areas shall be connected to the work area by a clear access path formed by two warning lines.

(b) When the path to a point of access is not in use, a rope, wire, or chain equal in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area.

(4) Mechanical Equipment. Mechanical equipment may be used or stored only in areas where employees are being protected by either a warning line or an MSS system. Mechanical equipment may not be used or stored between the warning line and the roof edge unless the employees are being protected by an MSS system. Mechanical equipment may not be used or stored where the only protection provided is by a safety monitoring system.

(5) Roof Edge Material Handling Areas and Materials Storage. Employees working in a roof edge materials handling or materials storage area located on a low-pitched roof with a ground to eave height greater than 16 feet (4.9 meters) shall be protected from falling by the use of an MSS system along all unprotected roof sides and edges of the area.

(i) When guardrails are used at hoisting areas, a minimum of four feet of guardrail shall be erected on each side of the access point through which materials are hoisted.

(ii) A chain or gate shall be placed across the opening between the guardrail sections when hoisting operation are not taking place.

(iii) When guardrails are used at bitumen pipe outlets, a minimum of four feet of guardrail shall be erected on each side of the pipe.

(iv) When safety belt systems are used, they shall not be attached to the hoist.

(v) When safety belt systems are used they shall be rigged to allow the movement of employees only as far as the roof edge.

(vi) Materials may not be stored within six feet of the roof edge unless guardrails are erected at the roof edge.

(vii) Materials which are piled, grouped, or stacked shall be stable and self-supporting.

#### (6) Training

(i) The employer shall provide a training program for all employees engaged in built-up roofing work so that they are able to recognize and deal with the hazards of falling associated with working near a roof perimeter. The employees shall also be trained in the safety procedures to be followed in order to prevent such falls.

(ii) The employer shall assure that employees engaged in built-up roofing work have been trained and instructed in the following areas:

- (a) The nature of fall hazards in the work area near a roof edge;
- (b) The function, use, and operation of the MSS system, warning line, and safety monitoring systems to be used;
- (c) The correct procedures for erecting, maintaining, and disassembling the systems to be used;
- (d) The role of each employee in the safety monitoring system when this system is used;
- (e) The limitations on the use of mechanical equipment; and
- (f) The correct procedures for the handling and storage of equipment and materials.

(iii) Training shall be provided for each newly hired employee, and for all other employees as necessary, to assure that employees maintain proficiency in the areas listed in paragraph (g) (6) (ii) of this section.

2. Section 1926.502 of 29 CFR Part 1926 is amended by adding a new paragraph (p) to read as follows:

(p) For the purpose of paragraph (g) of 1926.500, the following definitions shall apply:

(1) "Built-up-roofing" – a weatherproofing cover, applied over roof decks, consisting of either a liquid-applied system, on single-ply system, or a multiple-ply system. Liquid-applied systems generally consist of silicone rubber, plastics, or similar material applied by spray or roller equipment. Single-ply systems generally consist of a single layer of synthetic rubber, plastic, or similar material, and a layer of adhesive. Multiple-ply systems generally consist of layers of felt and bitumen, and may be covered with a layer of mineral aggregate.

(2) "Built-up-roofing work" – the hoisting storage, application, and removal of built-up roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

(3) "Low-pitched roof" – a roof having a slope less than or equal to four in twelve.

(4) "Mechanical equipment" – all motor or human propelled wheeled equipment except wheelbarrows and mopcars.

(5) "MSS Systems" (motion-stopping-safety systems) – fall protection using the following equipment singly or in combination; standard railings (guardrails) as described in 1926.500(f); scaffolds or platforms with guardrails as described in 1926.451; safety nets as described in 1926.105; and safety belt systems as described in 1926.104.

(6) "Roof" – the exterior surface on the top of a building. This does not include floors which, because a building has not been completely built, temporarily become the top surface of a building.

(7) "Safety-monitoring system" – a safety system in which a competent person monitors the safety of all employees in a roofing crew, and warns them when it appears to the monitor that they are unaware of the hazard or are acting in an unsafe manner. The competent person must be on the same roof as and within visual sighting distance of the employees, and must be close enough to verbally communicate with the employees.

(8) "Unprotected side or edge" – any side or edge of a roof perimeter where there is no wall three feet (.9 meters) or more in height.

(9) "Work area" – that portion of a roof where built-up roofing work is being performed.

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**IMPORTANT NOTICE:** The following decals should appear on your product. If they are not visible or are missing, write to us for free replacement.

**GARLOCK**  
**EQUIPMENT COMPANY**  
2601 NIAGARA LANE • MINNEAPOLIS, MN 55447-9855



## INSTRUCTIONS

### AND WARRANTY CARD ENCLOSED

READ AND UNDERSTAND OPERATING INSTRUCTIONS FOR THIS EQUIPMENT. FAILURE TO COMPLY WITH INSTRUCTIONS MAY RESULT IN SEVERE PERSONAL INJURY. IF INSTRUCTIONS BECOME LOST, WRITE TO US FOR FREE REPLACEMENT!

GARLOCK EQUIPMENT COMPANY  
ATTN: CUSTOMER RELATIONS  
2601 NIAGARA LANE  
MINNEAPOLIS, MN 55447-9855

M160612





This card must be filled out completely and mailed within ten (10) days from date equipment is delivered or warranty is null and void.

EQUIPMENT PURCHASED ..... SERIAL NO. ....

DATE DELIVERED ..... NAME OF PURCHASER .....

ADDRESS ..... CITY ..... STATE ..... ZIP .....

PURCHASED FROM (DEALERS NAME) ..... ADDRESS .....

CITY ..... STATE .....

Was a copy of the owner's manual and operating instructions included with the above equipment? YES ..... NO .....

Will the owner of the equipment provide instruction and copies of the owner's manual for all operators of the equipment?

YES ..... NO .....

Was the equipment specified above, received in good condition? YES ..... NO .....

If there was some defect or damage to the equipment, please indicate the nature of the same .....

Please send product catalog ☐

SIGNATURE OF PURCHASER .....  
(If purchaser is a corporation, this card must be signed by corporate officer)

TEAR OFF AND RETAIN THIS PORTION FOR YOUR FILE

### GARLOCK EQUIPMENT COMPANY

2601 Niagara Lane

Plymouth, Minnesota 55447

- (A) EXPRESS WARRANTY: Manufacturer warrants each product to be free from defective material and workmanship for a period of 12 months from date of delivery to purchaser except that the materials and workmanship on electrical equipment and hydraulic equipment are warranted for a period of 120 days from date of shipment to the purchaser. This warranty does not cover the engine or tires which are covered by separate warranties of the respective manufacturers.

This warranty does not apply to brushes, v-belts, cutting tools, cable or wire ropes, and impellers.

The manufacturer makes no other express warranties and no affirmation by manufacturer or its representatives by word or action shall constitute a warranty.

CONDITIONS: Since manufacturer is shipping equipment designed for specific purposes, any shop modifications made to said equipment by the owner, freight damage, collisions, overturn, dropping, water damage or damage to the machine or equipment after shipment by manufacturer voids the warranty. Warranty is further void if the equipment is subject to unusual, improper use or abuse or for purpose for which it was not intended.

The warranty is void if the machine or equipment is transferred to the possession of another by the original purchaser.

PARTS & SERVICE: During the warranty period as set forth in the express warranty parts found defective by the manufacturer's inspection and covered by the warranty will be replaced free of charge, F.O.B. Plymouth, Minnesota. Should service such as erection, demonstration or repairing of the machine or equipment be requested beyond that covered by the warranty, such service will be rendered at a charge, plus transportation and expenses of the factory service representative.

The warranty card must be filled out and returned to the manufacturer at the time the product is put into service for the warranty to be valid. Warranty claims are limited to the machine or equipment sold by the manufacturer and under no conditions do they extend to work spoilage, contracts lost, or other costs that may accrue to the user or owner of the equipment and in no event shall the manufacturer be liable for any special or consequential damages.

Model .....

Serial No. ....

Date Purchased .....

GARLOCK EQUIPMENT COMPANY  
2601 NIAGARA LANE  
PLYMOUTH MN 55447-9855



## UPDATE YOUR INSTRUCTIONS AND DECALS

In the interest of your safety we feel it is important that all Garlock products in use, no matter how old, have up-to-date instructions and decals. The instructions should stay with the product as well as the decals. For any Garlock product you have that doesn't have instructions or readable decals, indicate below. The following items are available free of charge.

- 1) Instruction tube with tabs for each unit. (You clamp on to appropriate place on machine.)
- 2) Set of instructions for each unit.
- 3) Set of current decals for each unit.


## WE CARE ABOUT YOUR SAFETY

*cut along this line and return*


### I CARE ABOUT SAFETY TOO!

Please send me instruction tube, current instructions, or decals as indicated for the following Garlock quality products.

Name of Product	Decals	Instructions	Tubes	Name of Product	Decals	Instructions	Tubes



Qty.



Qty.

Our company name and address is

**GARLOCK**

**EQUIPMENT COMPANY**  
2601 NIAGARA LANE • MINNEAPOLIS, MN 55447-9855

\_\_\_\_\_  
Company

\_\_\_\_\_  
Street

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Your name

