

Nordic Joist Repair Detail for Adjacent Web Holes

This technical note provides a repair detail for adjacent web holes in Nordic I-joists, where the clear distance between holes does not exceed twice the diameter of the largest round hole or twice the size of the largest square hole.

This repair shall be used for an occasional damaged I-joist in a floor or roof system. Where multiple adjacent I-joists are damaged, suitability of this detail must be validated by a professional.

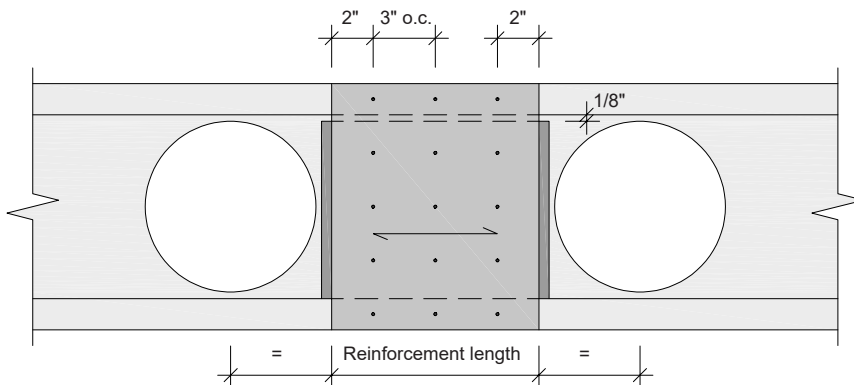
This technical note only applies if the following assumptions are met:

1. The I-joist supports uniform loads only.
2. The I-joist top and bottom flanges are not damaged.
3. The clear distance between adjacent holes exceeds the minimum reinforcement length indicated below for the given I-joist depth.
4. The web hole diameters do not exceed the maximum permitted at their location. In the case of square or rectangular web holes, the largest dimension does not exceed 3/4 of the maximum diameter permitted for a round hole at their location.
5. Where the adjacent holes can be circumscribed within the longest duct chase permitted at their location, no repair is necessary.

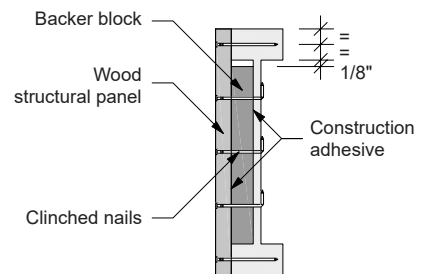
Repair detail requirements:

- Reinforcement:
 - Reinforcement shall be installed on one side of the joist and centred between the adjacent web holes. Install with face grain horizontal, matching the joist depth.
 - Use a wood structural panel with a minimum thickness of 23/32-inch (for OSB, panel mark 48/24).
 - The following reinforcement lengths apply:
 - For 9-1/2-inch I-joists, minimum length of 7 inches with 2 vertical rows of nails.
 - For 11-7/8-inch to 14-inch I-joists, minimum length of 10 inches with 3 vertical rows of nails.
 - For 16-inch I-joists, minimum length of 13 inches with 4 vertical rows of nails.
- Backer block:
 - Install leaving a 1/8-inch gap between the top of the backer block and the bottom of the top flange.
 - Use a wood structural panel or solid sawn lumber S-P-F No. 2 or better.
- Fasteners:
 - For 2x3 flanges, use 5 horizontal rows of 3-inch common nails at 3 inches o.c. (clinched when possible).
 - For 2x4 flanges, use 5 horizontal rows of 3-1/2-inch common nails at 3 inches o.c. (clinched when possible).
 - One horizontal row of nails shall be centred on each flange; evenly space the remaining horizontal rows.
- Construction adhesive must be applied to all surfaces in contact.

For configurations beyond the scope of this technical note, refer to Construction Details ([NS-DC3](#)) or contact our technical support (tech@nordic.ca).



Elevation view of a repaired I-joist



Section view of a repaired I-joist