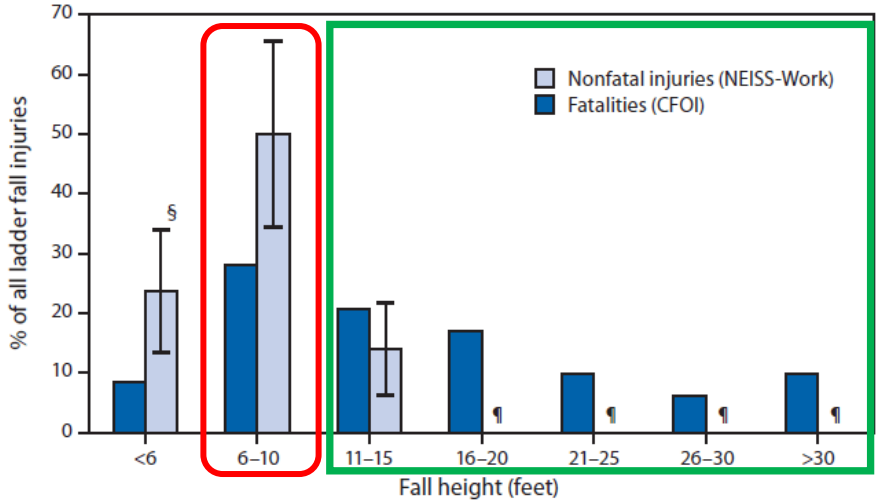
Optional Lowering of Heights for which Fall Protection should be Provided

Manitoba considers that fall protection be required at heights of 3 meters (almost 10 feet). However, serious and even fatal accidents can happen at lower heights. Consider the accident statistics from ladders.

FIGURE. Percentage of ladder fall fatalities* and nonfatal ladder fall injuries treated in emergency departments,† by fall height (when documented) — United States, 2011



The green box shows incidents that would be prevented using a 10 foot criteria for fall protection. The red box shows the incidents that that are not covered by the MB guidelines but would be prevented if the criteria was lowered to 6 feet. Notice that the majority of injuries and a large portion of fatalities occur at heights of less than 10 feet. 83% of the injuries and 36% of the fatalities occur at heights that Manitoba does not require fall protection.

Effect of Lowering the Threshold for Fall Protection

Criteria	MB Legal Requirement	6 Feet Guideline
% of injuries prevented	17%	72%
% of fatalities prevented	64%	93%

It is for this reason that fall protection starts at lower heights in other jurisdictions. For example, OSHA in the United States requires that fall protection be provided at elevations of four feet in general industry workplaces, five feet in shipyards, six feet in the construction industry and eight feet in long-shoring operations.

The reason for this is as follows: OSHA limits the amount of force that a person can experience during a fall to 1,800 pounds. Forces greater than this can result in internal bleeding or even death. From the table below, you can see that forces of 1,800 pounds can occur at somewhat over 4 feet. The Manitoba legislation requires fall protection for a height of 3 meters (over 9 feet). Using the above table, what would be the force at impact

from a fall from 9 feet? This is why many companies have opted to introduce fall protection at heights significantly lower than the height in Manitoba legislation. Because it prevents injuries to workers.

Force of Impact from Falls of Increasing Heights

Elapsed Time	Distance Traveled	Velocity (fps)	Speed (mph)	Force at Impact
0.00	0	0	0	0
0.25	1 foot	8	5.5	400 lbs.
0.50	4 feet	16	11	1,600 lbs.
0.61	6 feet	20	14	2,400 lbs.
0.75	9 feet	24	16	3,600 lbs.
1.00	16 feet	32	22	6,400 lbs.
1.25	25 feet	40	27	10,000 lbs.
1.50	36 feet	48	33	14,000 lbs.
1.75	49 feet	56	38	19,600 lbs.

OSHA Standard

MB Standard