

Snow Shovel Design Facts



Winter is here. We should take a moment to remember that it can be hard work clearing the snow off our sidewalks and driveways. Recently, there has been an increase in the number of "ergonomically" designed shovels that are available for purchase at local hardware store. Is it worth the extra money to purchase a new shovel? What qualities should you look for in a "good" snow shovel?

The Bent Handle The Liberty Mutual Research Center for Safety and Health found that when people use a bent shaft snow shovel, they bend forward less than with a straight shaft shovel. By bending less, this may reduce the maximum spinal compressive and shear forces created when lifting the loaded shovel from the ground.

Metal vs. Plastic Should you go for durability or safety? The trade offs are that a metal shovel is more durable, but is the heavier shovel. This weight will result in fatigue faster. A plastic shovel may not last as long, but is the lightest material. A plastic shovel will be easier to lift.

The Size of the Shovel This, like any other piece of equipment, should match the person doing the shoveling. A taller, heavier person should use an 18" x 16" blade shovel that maximizes the load (covers more area). The shaft should be 52" long with a 1 ¼" handle. A shorter, lighter person should use a shovel with a blade 16 ½" x 14 ½" wide, a shaft 42" long, and 1 ½" handle diameter.

Handles The handles should allow for a free grip when wearing gloves or mittens. The cushioned "D" grip handle provides the best grip and comfort. Look for a fiberglass handle if possible. A fiberglass handle is up to 3x stronger than wood and won't splinter, warp, or dry rot.

References:
Ergonomic Design of the Snow Shovel
<http://ergo.human.cornell.edu/ErgoPROJECTS/97projects/coffiner.htm>
Liberty Mutual - Research Center - Bent -Shaft Snow Shovels Reduce Pressure
www.libertymutual.com/research/news/releases/press_snow_shovel.html

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