

BUILDER



THE MAGAZINE OF THE CANADIAN HOME BUILDERS' ASSOCIATION

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Tool Talk: On the Level

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ON THE LEVEL

Are you up to date with the evolution of levelling technology?

An incredible number of companies make simple and highly complex levelling devices and sorting through their comparative advertising claims is difficult. Often site experience in your own application is the only real judge. Here is an overview of the field as it has developed to date and a list of the primary hi-tech players—and don't miss the unique new Bosch technology for flat floors at the end of the article.



It all started with a weighted string

The original vertical line was a weight on a string, used by craftsmen for centuries. That string became both a slope meter and a horizontal level by hanging the string from an equal-sided triangle. When the pendulum pointed to the centre of the bottom cord of the triangle, the triangle was on level ground—a technique still used today for properly sloping irrigation ditches in Africa.

It wasn't until 1920 that **HENRY ZIEMANN** invented the single glass vial spirit level and it took almost a century more before electronics have enhanced or replaced that little bubble in a glass tube. Then in the last 20 years, it has become a whole new world, and significant change has not stopped yet.

One of the simplest enhancements to the glass vial was to add a light for accurate work in poorly lit environments. Today be sure to look for ones with LED lights, like the **Swanson** Savage Lightning Level shown here, because with LED technology both the light and the battery will last a very long time.

It is now common to replace the glass vial completely with an electronic read-out on your level, from small torpedo levels to long beam and box levels. The best of these will give a

digital read-out of angle or slope (great for plumbing and drainage) as well as an audio signal for horizontal or vertical so you don't even have to look at your level. My next generation request is to be able to set an angle/slope yourself and have a distinct audio signal when you hit your pre-set.

And then along came lasers

Initial laser technology projected a simple, very focused red dot, and this was often added to an ordinary level, even with just glass vials, to extend the reach of your level line. Numerous inexpensive retail store levels now do this very well.

Someone discovered that it was useful to shoot dots out both ends of a level, giving you

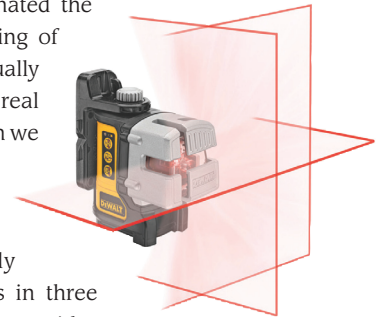


the spot on the ceiling directly over a spot on the floor, like the **Milwaukee** 2-Beam Plumb Laser shown here.

Then motion was added to make a dot moving rapidly look like a line for floors, walls and the most common, horizontal rotating levels we now see on all job sites, like the **Dewalt** DW074KD or the **Leica** Rugby 50 shown here.

One variation that developed was a prism that eliminated the mechanical moving of the dot and actually projected out a real straight line. Then we got two lines at right angles, and now three lines to finally situate ourselves in three dimensional space with a single projection. There are no more excuses for things being out of line.

With the development of dots and lines, the reception of that laser became more and more important. Projecting onto floors and walls, you can simply see the line. Visual line clarity can be enhanced with special glasses and is



improving with the increasing power of laser beams all the time. Test a tool for visual reception before buying.

But when the sun is bright, or the distance is far, something better was needed so receiving targets that could show the visual line better grew into electronic sensors that make audible noises when the laser hits it, if you see the line/dot or not.

It wasn't long before remote control zappers could turn on/off and rotate the levelling devices, changing many jobs from a two person operation to a solo operation—or simply saving battery life by turning it on only when you need it.

New technique for flat floors

Lasers certainly helped to get floors flat, especially for tile and other precision demanding applications by simply projecting out a line parallel to the floor and then moving a target, perhaps even just a tape measurer, all along the line to see if the floor drops or rises with respect to that dot or horizontal line.

But technology keeps moving forward and



Bosch now has what they call the GSL2 Surface Laser, what I call “split line visual topography.” It projects two lines out together. You focus them to a single line, and then simply walk along the line. Where the two lines bow out away from each other is either higher or lower than where the two lines are merged. A special target will even identify the exact deviation and you can mark the entire affected area directly on the floor. A remote control step rotation makes checking the entire floor a quick one-man operation. Truly flat floors are becoming critical with many new floor coverings, especially large format tiles and this tool costs less than a single call-back. Watch it in action on the BoschTools.com website.



Bosch: www.BoschTools.com
 Bosch GSL 2: www.bosch-professional.com
 Dewalt: www.DeWalt.com
 Milwaukee: www.MilwaukeeTool.com
 Trimble: www.Trimble.com
 Topcon: www.TopconPositioning.com
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Montreal-based TV broadcaster, author, home renovation and tool expert *Jon Eakes* provides a tool feature in each edition of *Home BUILDER*.
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