



Dye-penetrant testing

Is the material in your equipment and your products of sufficiently high quality to be launched on the market? Can you guarantee the safety and longevity of your products? Our specialists carry out the necessary checks to detect errors and to ensure the better quality of your products.

Your tailor-made solution

Penetrant testing is used to detect surface defects such as surface cracks, in all non-porous materials. Penetrant testing can detect cracks, scaling, porosity, pits, etc. in workpieces in various stages of production, during preparation for welding, and for welding joints. Penetrant testing makes it possible to detect metal fatigue (fatigue cracks, pitting, etc.) in installations that are in operation, well in time.

Methodology for penetrant testing:

A coloured liquid, namely the penetrant fluid, is applied to the surface of the material after cleaning it. The liquid penetrant then penetrates into the surface cracks through capillary action. A developer is applied after removing the excess product, and one can then see where the penetrant fluid has, by capillary action, penetrated into the surface faults . Thus it is possible to visualise cracks with a width of even 1 micron (0.001 mm).

The surface to be tested should not be porous or painted. The surface should be clean and should not be excessively rough. It should therefore first be checked whether the surface is blocked with dirt, extraneous elements and material overlaps. The method can be used in case of open discontinuities. The method can be used without any problems on workpieces with a temperature of between 5 and 50 ° C. Specific products, however, also exist in case of higher temperatures (up to 200 °).

Your result

This inspection is essential for your materials and can offer you numerous advantages:

- simple testing method, which however requires good expertise in visual inspection.
- the method can be used anywhere in the field: it does not require laboratories or workshops.
- this technique can be used on all non-porous materials.
- it does not require extensive equipments or accessories.
- it is possible to detect cracks with a width of only 1 micron.

Please note

Norms and Standards

ASME, EN and ISO standards or other national standards

In which situation?

This service is intended for all types of customers, to check materials and workpieces during production and to check equipment during operation. The technique is not suitable for workpieces that have been sandblasted or shot blasted. Vinçotte can offer you a suitable solution to your situation as well. Contact us for advice tailor-made to your requirements.