



The Penetrant Professor from *Met-L-Chek*®



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Penetrant Inspection Turkeys

The following information originates with our friends in France, and is excerpted from their newsletter. We recommend this free newsletter to you, which is conveniently published in both French and English. To subscribe to it via email, go to <http://www.res-suage-magnetoscopie-penetrant-testing-magnetic-testing-dpc.info>

The subject deals with penetrant inspection products that have been introduced at one time or another, but for which no viable commercial market was found. As a result, these are no longer usually available. They fall into that old saying, "I thought that it was a good idea at the time - - -" We are not going to discuss all of the things that are in the French discussion,



but some that might be relevant to our experience here in the US.

Thixotropic penetrants are one of these products. These penetrants are in a gel form when they are applied. As a result, a small amount can be placed on an exact spot without spreading past the area that one wishes to examine, kind of like putting a spoonful of jello on the part. After application, the viscosity of the gel decreases so that the penetrant can enter the flaws. A similar advantage can be had by using a Q tip with regular penetrant. In any event, the market for this novel penetrant is limited enough that it is not usually possible to find it "on the shelf".

Dual purpose penetrants are another of these somewhat different penetrants. They function both as visible penetrant and fluorescent penetrants. However, they are not listed on the **AMS-2644** QPL, so their utility is limited because they are not allowed under specifications that require the use of qualified penetrants, and may not be sensitive enough to meet the **AMS-2644** criteria. As a result, they find a very limited market

Reverse fluorescent penetrant systems are an interesting variation. This system shows flaws as dark indications against a fluorescent background, rather than fluorescent indications against a dark background. However, it is more tiring for inspectors to use, and has not found a ready market.

Felt tipped pens charged with penetrant seem to come and go. They are attractive and handy to apply penetrant to small spots, but there seems to not be enough of a market to have them readily available.

Peelable developer had a small resurgence in recent years for making a record of the size of indications on **TAM** panels, but this seems to have been superseded by the use of digital cameras.

Another idea that seems to have come and gone is mini kits of visible penetrant named **Spotcheck® Junior**.



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And, we add to this list that originated from the French newsletter, the following **U. S. patents** that have been issued regarding penetrants, and process ideas which never made their way into marketable products.

Slow-solubility inspection penetrant composition containing a solubility accelerator.

Nonsurfactant remover composition for inspection penetrants.

Method of regenerating a glycol-ether type inspection penetrant remover by solvent extraction.

Inspection penetrant process using solvency-inhibited remover composition.

Method of regenerating an inspection penetrant solvent.

Inhibited pre-wash stripper composition for water-washable inspection penetrants

Open-loop water-washable inspection penetrant process.

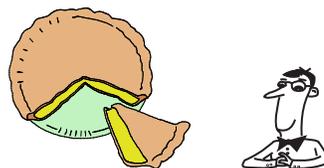
Method of recovering and re-cycling water-washable inspection penetrants.

Method and means for improving flaw entrapment efficiency in water-washable inspection penetrant.



Method and means of accelerating removal of background entrapments in the inspection penetrant process.

Water-washable inspection penetrant employing mineral solvent and a fatty acid solubility promoter.



Things You Can Actually Use

Some times we see things that seem to make sense and like to make users aware of those items. One such item is a multi timer for penetrant processing lines.



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2009

IOWA STATE UNIVERSITY RESEARCH

The work at **Iowa State University** that was dedicated to facets of penetrant inspection is now over. Funded by the **FAA**, and with the participation of **Met-L-Chek®** and other penetrant manufacturers and users, the studies have produced information that is of use to anyone who uses penetrant inspection. **ISU's** work has provided important information for use in the development and maintenance of specifications.

In addition to the results of the studies, which are available on the internet, Iowa State has printed pocket calendars for the **2010** year. These calendars contain snippets of important points to remember while conducting penetrant inspection. We have a number of these calendars and will be happy to send them to anyone who requests one, for as long as our supply lasts. *First come, first served.*

The Penetrant Professor



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