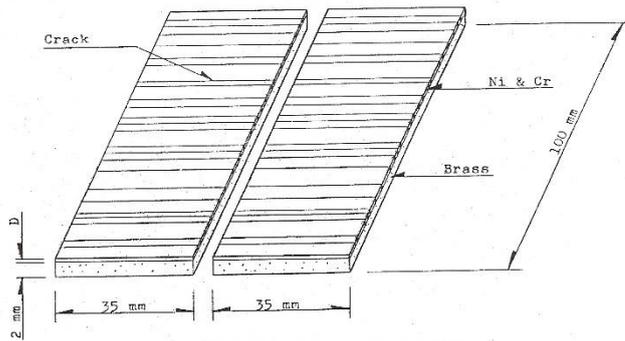


Ni-Cr test panel is a brass plate, which is plated with nickel and chrome of desired thickness uniformly. The panel is provided with parallel linear cracks on the plated layer by application of stretching stress in a direction perpendicular to the prospective direction of cracks.



( Fig. - 1 )

Compared with plated layers, brass plate is more ductile so that cracks generated in the plated layer are restricted at the surface of the brass plate. Therefore, the depth of the plated layer becomes identical to that of plated layer. Consequently, precise determination of the depth of cracks is provided by controlling the thickness of the plated layer.

After provision of cracks. Test panel are manufactured by separating a plated panel into two pieces with a cutting line perpendicular to the direction of cracks so that excellent symmetry proportion of the two panels is obtained.

By using this advantage, the panel is effective. In comparing performance characteristics of various penetrant liquids, aging check of penetrant liquid on the inspection lines. Etc.

## TYPES OF TEST PANELS

There are four kinds of TYPE-I test panels, having different plate thickness i.e. crack depth of 10, 20, 30 and 50  $\mu\text{m}$  are provided.

Thus, the way of maintaining the performance of penetrant liquid is provided by selecting the Type of test panels according to the sensitivity of penetrant liquid:

Red dye penetrant testing

TYPE-1 crack depth 30 & 50  $\mu\text{m}$

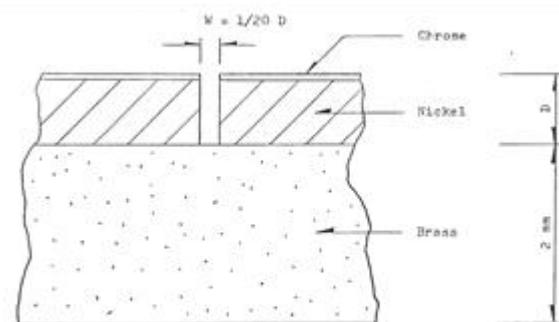
Fluorescent penetrant testing

- For ultra-high sensitivity: TYPE-I crack depth 10 & 20  $\mu\text{m}$
- For high sensitivity: TYPE-I crack depth 10, 20 & 30  $\mu\text{m}$
- For normal sensitivity: TYPE-I crack depth 20, 30 & 50  $\mu\text{m}$

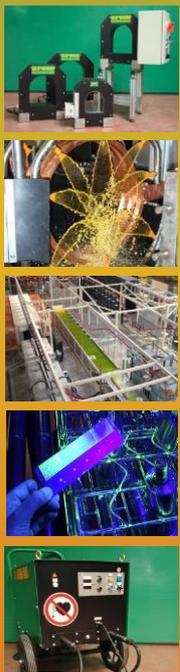
## CRACK DEPTHS

The crack depth (D) of the TYPE- 1 test panel is equal to the thickness of nickel and chrome plated on the surface of brass board. (See Fig. - 2)

As shown in Fig. -1, the average value of four corners of test panel measured is considered as plate thickness. Each measured value shall be within  $\pm 10\%$  of the rated size.



( Fig. - 2 )



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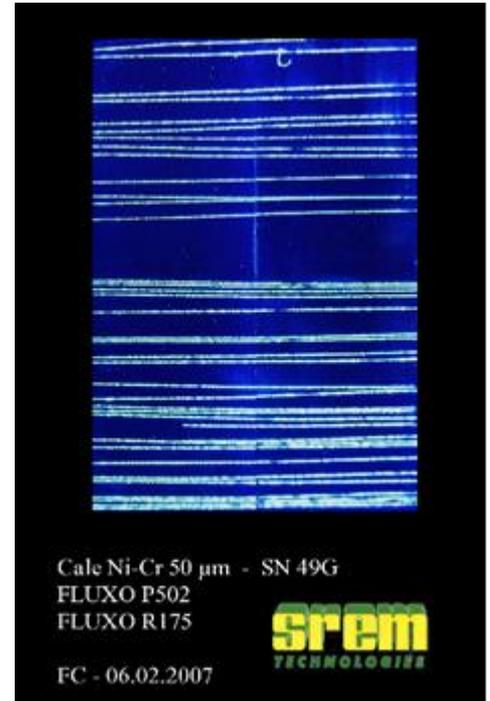


## RACK INDICATION:

Photo-2 shows an example of the crack indication on TYPE-I 50 µm test panel inspected by using normal sensitivity of fluorescent penetrant and non-aqueous wet developer. As this photo shows that every cracks on the pair of the two pieces panel are obtained excellent symmetrical proportion. Thus, exact comparison test can be done for various penetrant materials.

## APPLICATION:

These tests panels are used for the confirmation of sensitivity level for the penetrant inspection material and systems. They are also used to regularly check the performance of penetration inspection materials and equipment



## SPECIFICATION :

Externe dimensions	A pair 35 mm x 70 mm
Base metal	Brass plate (thickness: 2 µm)
Plating	Electrolytic Nickel and Chrome
Accuracy of crack depth	Within ± 10% of the indicated crack depth
Crack width	Set to 1/20 of the crack depth



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