

How severely does rust damage the side walls of a web press?

AN EXPERT REPORTS FROM THE COAL FACE (17). A one-year old newspaper press displays visible rust on the inner surfaces of the side walls. At the request of the press manufacturer and the customer, the cause and extent of the damage, possible further damage and the elimination of the damage are to be documented in an out of court expert opinion.

After one year the operator of a newspaper press noticed rust affecting the inner surfaces of the side walls of its press. This raised the question for it of whether further damage, for example to the bearings of the printing cylinders, might result from this.

Answers to questions about the cause of the damage and its elimination are also be clarified in the examination with the press manufacturer.

INVESTIGATION. The action of rust at various positions on the inner surfaces of the side walls was investigated with the aid of cylindrical samples made from the same cast iron material as the side walls of the press. These cylindrical specimens were 20 mm in diameter and 60 mm long and they were securely positioned at various point on the in-



Figure 1a: Cast iron specimen from the outer side of the side wall.

ner surfaces. It is important that the surface roughness of the cast iron cylinders is precisely the same as the roughness of the inner surfaces of the side walls. As a control, specimens were also placed on the outer surfaces of the side walls, which, unlike the inner surfaces, are painted.

At intervals of four weeks the specimens were examined and the appearance of the surfaces recorded, and after three months it was possible to conclude the simulation with the following findings.

The samples that had been positioned on the external, painted surfaces of the side wall

showed no traces of corrosion. On the other hand, the cast iron specimens positioned on the inner surfaces of the side walls had suffered a similar corrosive attack to the surfaces of the side walls themselves.

WHERE DOES THE RUST COME FROM? Figure 1a is an example of a specimen from the outer surface of a side wall, whilst figure 1b shows a specimen from the internal side wall.

The rust that develops on the inner, unpainted surface of the side wall is due to damping solution from the spray damping units of the press. However, both the water used and the fountain additive lie within the limits laid down in the guidelines of the press manufacturer.

The bearings of the printing cylinders were



Figure 1b: Cast iron specimen from the inner side – showing corrosive attack.

closely examined, as were the bearings of the rollers, the distributor, etc. A close inspection of press in the area of the side walls found that there was no further damage.

THE DAMAGE. The inner faces of the side walls displaying corrosion are not functional surfaces in the sense of performing specific functions as, for example, do bearer rings, bearing surfaces, printing cylinder surfaces and so on. Corrosion of these side wall surfaces does not impair the function of the press and it maintains its value.

Before starting to use a suitable corrosion in-

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DD Series ■ Dr Colin Sailer, a publicly appointed sworn expert for presses, offset and gravure printing, reports from real life. He has an engineering and expert investigation practice in Munich. (Tel.: +49 (0)89/69 38 85 94; web: www.print-und-maschinenbau.de).



Dr Colin Sailer

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hibiting oil, cylindrical cast iron specimens were sprayed with a selected corrosion inhibiting oil and then positioned for three months at various points on the inner surfaces of the side walls. The result was striking. At the end of the three month trial, the specimen looked the same as it did before the test (figure 1a).

On the recommendation of the expert, the inner surfaces of the side walls were cleaned of rust and the sprayed with the previously tested and effective corrosion inhibiting oil. The advice of the expert is that the inner surfaces of the side walls should be regularly sprayed every three months. The press manufacturer undertook to meet the labour costs for removing the rust and the corrosion inhibiting oil costs for one year.