

CONDURSAL 0090

**Stop-off Paint for carburising and carbonitriding in gas
up to case depths of 1,3 mm**

Properties

CONDURSAL 0090 is a very effective stop-off paint for all forms of gas carburising and carbonitriding. Suitable for both unalloyed and alloyed steels, it is giving excellent protection against carbon pick-up for case depths up to 1.3 mm max. Unlike other protective coatings its residues can be removed after heat treatment easily by simply washing with hot water or alkaline. This is one of the reasons why CONDURSAL 0090 has become the insulation compound which is most commonly used all over the world in continuously working heat treating lines for carburising and carbonitriding.

In order to meet the requirements of different ways of application, Condursal 0090 is available in 4 modifications, differing in consistency but showing the same unique performance.

1. CONDURSAL 0090 PASTE CONSISTENCY for FEEDING

To apply the coating through an orifice supplied with the paint by a pressurized container (similar to a grease gun equipment), this consistency is suited best. This method of application can be easily mechanized for mass production - as recently shown in fully computerized installations at FORD, GM and GETRAG transmission plants. It provides sharply defined layers with maximum efficiency and is particularly suitable for the protection of external threads, short gear teeth, splines, etc.

2. CONDURSAL 0090 for SPRAYING

This low viscosity grade is applied using a pressurized container combined with spraying pistols, the nozzles of which normally having a diameter of 1.5 - 2.5 mm. Spraying is most commonly used for continuous work, e.g., large series of pieces such as gears and axles.

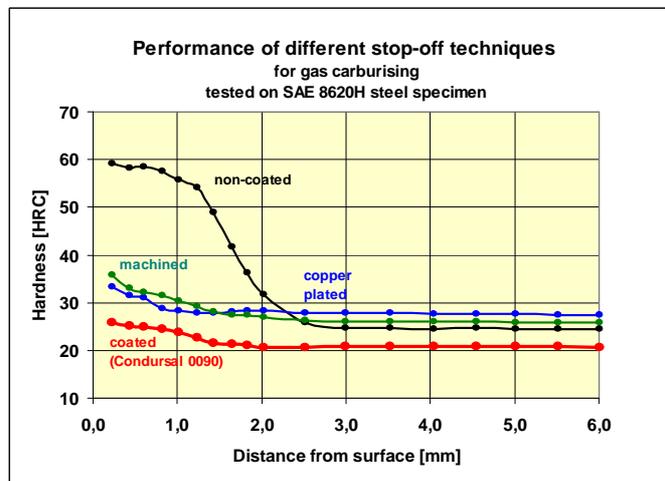
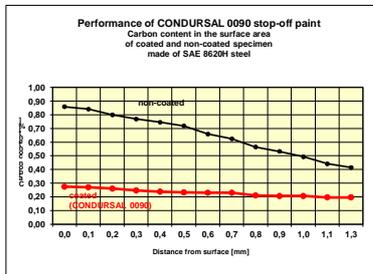
3. CONDURSAL 0090 for DIPPING / IMMERSION

This grade is suited best for components with the area to be protected located at one end, so that coating by dipping / immersion is possible. It adheres quickly and does not tend to drip off. It is recommended to remove the excessive paint from the lower end of the workpiece by shaking or wiping, so that it can be recovered. As long as the paint is not fully dry, it may be reconditioned by simply adding small quantities of the "SPECIAL THINNER FOR CONDURSAL 0090". When dipping the parts, it is useful to move the pieces to and fro or around to prevent air bubbles from sticking to the surface.

4. CONDURSAL 0090 for PAINTING

This "normal" consistency is most commonly used for manual application, whenever the variety of workpieces or areas to be coated do not allow automatic or mechanized coating. It can be applied easily, similar to a viscous oil paint using a flat soft brush.

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Instructions for Use

Before applying stir the contents of the CONDURSAL 0090 tin thoroughly, which is important especially after extended storing. As received, Condursal 0090 is ready for use and suitable for the mode of application noted on the label of the tin. Prior to coating, the workpieces to be protected must be clean, i.e. free of oil, grease dust and rust. This can be accomplished by vapour degreasing, washing with alkaline or shotblasting.

Temperature of the surfaces to be coated should not exceed 30°C, which should be kept in mind particularly if the parts have been vapour degreased. Apply a continuous and non-streaky layer of CONDURSAL 0090 to the area to be protected by either painting, dipping, spraying or using grease gun equipment as mentioned above.

Thickness of the coating after drying should always be approx. 0.3 - 0.5 mm. For case depths up to 1.3 mm max., only one coating is necessary for optimum protection.

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During use, with the tin open, CONDURSAL 0090 will slightly thicken in the course of time due to evaporation of the solvent. So if necessary for proper application, add small quantities of "SPECIAL THINNER FOR CONDURSAL 0090" in order to restore the original consistency. Avoid overthinning and do not use any chlorinated solvents for thinning, because the latter would lead to severe corrosion problems.

After proper application, the coating should be allowed to air dry for 1 - 3 hours before the workpieces are put into the carburising furnace. Note: It is not recommended to carburise parts protected with CONDURSAL 0090 together with others coated with water base protective compounds, since the water vapour released during heating up of the latter would affect the CONDURSAL 0090 coating.

When loading the batch respectively the furnace, take care that the coated areas do not come into contact with other pieces or the baskets, in order to avoid damage to the protective layer but also unwanted insulation of noncoated neighbouring parts.

Special Notes

1. Coated areas of the workpieces should not exceed 30% of the total surface of the batch to be carburised because otherwise the carburising atmosphere might be affected.
2. Avoid excessive storage time, particularly at elevated atmospheric humidity, or any other possible contact of water or water vapour with the CONDURSAL 0090 layer after drying.
3. Do not preheat coated parts at temperatures exceeding 180°C with oxygen present.

Both contact with water and oxidising of the paint might cause running-off problems during the carburising process to follow. After carburising, workpieces protected with CONDURSAL 0090 can be quenched either directly or after reheating without intermediate cleaning. Residues of Condursal 0090 do not dissolve in quenching oil or in marquenching salts.

Removal of Residues

Once the heat treating process is finished, the residues of CONDURSAL 0090 can be removed completely by simply washing with hot water or alkaline in either spray or immersion type washers. If after washing there should be any residues left, for instance in holes or internal threads, they can be removed easily by rubbing or brushing because of their powdery appearance. Parts quenched in nitrite/nitrate salt bath must be cleaned carefully because otherwise corrosion might occur due to damp salt residues on the previously coated areas.

Cleaning of brushes and other equipment

To clean brushes and other equipment used to apply CONDURSAL 0090, the SPECIAL THINNER FOR CONDURSAL 0090", xylene or similar solvents may be used. Water or alkaline are not suitable for this purpose except as far as thoroughly dried residues of the paint are concerned, which can be softened by immersion in water for several days.

Storage

CONDURSAL 0090 should be stored in a dry cool place.

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