

Colmonoy ALLOY NEWS

Hard-facing and Brazing Alloys Wearproof Castings Stainless Steel Processing

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INDUSTRIAL TECHNIQUE INVADES THE FARM

Hard-Faced Plow Shares Outlast 30 or More Unprotected Units

Experience of Nebraska farmers forms the most recent evidence that plow shares (blades) hard-faced with Colmonoy Sweat-On Paste and Wallex alloys will outlast between 30 and 40 unprotected units.

Farmers in the Wood River, Nebraska area have been testing Colmonoy hard-facing materials for several years. Increased profits have been realized through the use of plow shares that have been hard-faced for longer life. The small increase in initial investment required for application of Colmonoy alloys more than pays for itself in lower repair and replacement costs.

It has been proved time and again that maximum benefit is gained when the hard-facing alloy is applied before the share ever touches a field. This is true preventive maintenance for the farm; and it works there just as successfully as it does in industry.

The Hard-Facing Process

Figure 1 shows the simple steps in the hard-facing process. Colmonoy Sweat-On Paste is applied to the length of the blade on the bottom side; Wallex rod is applied to the top face of the point.

Sweat-On Paste is easily brushed on. After drying, it is fused to the parent metal with an oxy-acetylene torch flame. A $\frac{1}{16}$ -inch layer of Wallex rod is then welded to the point using an oxy-acetylene torch. Finish grinding or machining is not required in this application.

A Typical Hard-Faced Share

The moldboard bottom blades in Figure 2 are from the Wood River area. These shares have plowed 1400 and 1600 acres, respectively, and are both in good enough condition to plow an additional 1000 acres. An unprotected blade operating under identical conditions proved capable of working but 50 acres before becoming too dull for continued efficient operation.

A careful record of costs has been maintained in the Wood River test project. One interesting fact uncovered is that it costs just over one cent per plow share per acre to have Colmonoy hard-faced units—and that's *total cost*.

With March just a few short weeks away, now is the time to be thinking about getting plow shares ready for Spring. To progressive farmers, this means protection with Colmonoy Sweat-On Paste and Wallex.

Farmers using plow shares so protected will spend less time on plow share maintenance which means more time for actual crop production—will have lower plow share costs which means less money deducted from income and a bigger profit.

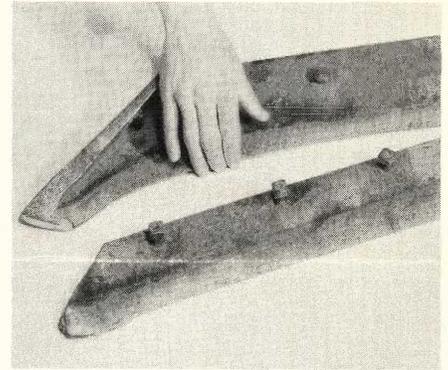
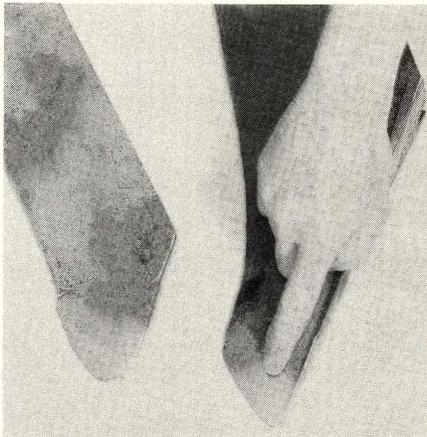
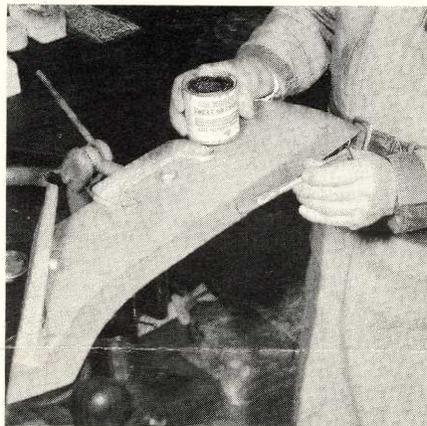


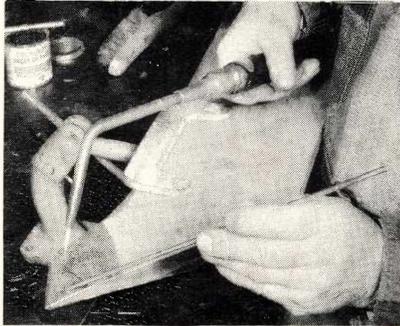
Figure 2 . . . MOLDBOARD bottom blades protected with Wall Colmonoy hard-facing alloys. Upper share has plowed in excess of 1400 acres at Wood River, Nebraska; edge is still sharp and in good enough condition for plowing an additional estimated 1000 acres. Lower blade was hard-faced when new—has plowed more than 1600 acres—is still in excellent condition. These useful life figures compare with a normal useful life of 30 to 60 acres for an unprotected share in the Wood River area soil.



Figure 1 . . . WEAR PROOFING a plow share involves three simple steps. Colmonoy Sweat-On Paste is applied with a brush to entire length of blade on bottom side (above left). After being allowed to air dry, Sweat-On Paste is fused to parent metal with oxy-acetylene torch flame (above). Illustration at left shows area on top face of plow share point to which $\frac{1}{16}$ -inch layer of Wallex rod has been applied using oxy-acetylene torch. Wallex application is shown in photo on back page under Colmonoy Product of the Month.

COLMONOY PRODUCT OF THE MONTH

Wallex Oxy-Acetylene Rods and D-C Electrodes



WALLEX being applied to top face of plow share as part of abrasion resistance protection program described on front page of this issue of Colmonoy Alloy News. This low cost iron-base alloy is also recommended for use in wear-proofing earth-moving and rough material handling machinery and equipment.

Wallex is the hard-facing material used to protect the top face of the plow share point in the application described on the front page of this February issue.

Wallex is chosen for this service because it is low in cost, offers excellent abrasion and impact resistance, and possesses an extremely low coefficient of friction. The latter property sharply reduces wear and enables the share to pass easily through the soil.

Wallex is also advantageously used in other applications requiring low-cost resistance to abrasion and impact. For example, Wallex is used to effectively extend useful service life of earth-moving and rough material handling equipment as well as gages, grinder rings, conveyor parts and pump impellers.

Properties, Specifications

Wallex is a chromium-molybdenum-manganese-silicon-iron alloy possessing excellent abrasion resistance, red hardness and weldability; very good corrosion, impact and galling resistance.

Iron-base Wallex has the additional advantages of being available as coated electrodes (D-C electric arc), bare oxy-acetylene rods, or as castings. It contains currently noncritical alloying constituents.

Rockwell hardness rating for Wallex is 56 to 60 on the C scale, melting point is 2375°F, and specific gravity is 7.77. Bare and coated rods are available in $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$ and $\frac{3}{8}$ -inch diameters. Tip color is brown.

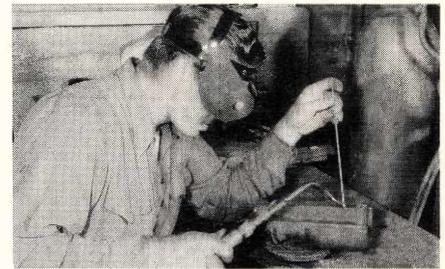
LOW-HEAT WELDING METHOD FOR GLASS MOULD REPAIR

Requires No Preheating

Cast iron glass-container moulds that develop chips or flaws during manufacture or operation are easily repaired without preheating by applying a low-heat welding method developed by Wall Colmonoy Corporation.

The 3-step method consists of grinding the area to produce a good welding surface; heating to just 200°F and applying flux; and finally, welding with Colmonoy No. 20 nickel-base alloy rod using a reducing oxy-acetylene torch flame (see figure).

Minimum heat used with this method keeps the mould from reaching the hardening temperature, preventing formation of hard spots adjacent to the weld. Colmonoy No. 20 will not discolor or mark the finished glass. Alloy hardness is 15 to 20 Rockwell C—can be smoothed by filing.



REPAIRING a cast iron glass-bottle mould by the Colmonoy low-heat welding method using an oxy-acetylene flame and a $\frac{3}{16}$ -in. diameter Colmonoy No. 20 rod.

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