

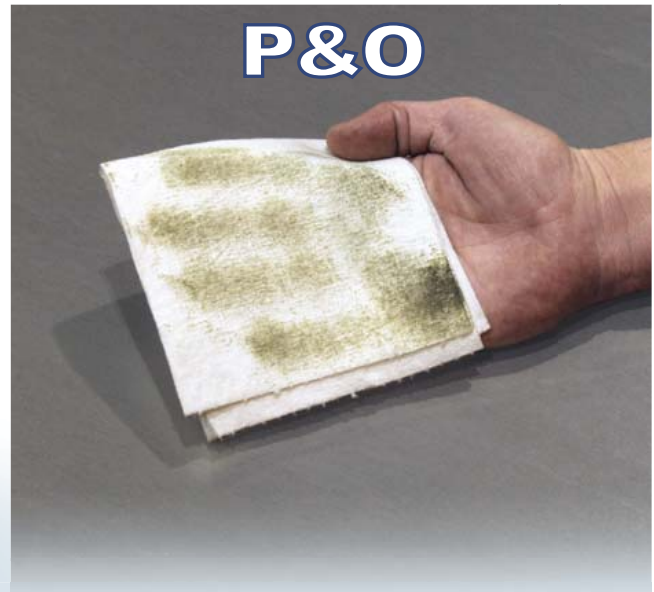


# THE MATERIAL ADVANTAGE Over Pickled & Oiled

You can tell a lot about a steel by looking at it. Like whether it has surface problems that make it tougher to work with and transform into quality products. You can tell even more by touching it. Like how clean it is and what it leaves on your hands, gloves and equipment. Or more importantly, what it doesn't leave.

With SCS, seeing *and touching* is believing. It's believing there's finally an alternative material that is cleaner and smoother than the P&O you're probably using today. But it's also what you don't see that counts. With SCS, you don't see P&O's film of oil which sticks to everything - equipment, clothes, work areas - and which becomes a pervasive penalty on your manufacturing processes.

You don't really see how kind SCS is to the environment either, but whether you're an SCS user or producer, your need for hazardous solvents, chemicals and acids may largely disappear. So will the many problems, small to large, that P&O's oil imposes on your manufacturing processes. **That's the SCS Material Advantage.**



Hot-rolled that is mechanically brushed.

Inhibits rusting without any coating or protection. SCS process removes existing surface rust from hot-rolled coils or sheets.

Typically 15 microinches better than P&O.

Extremely clean - less than 10% gray scale.

None. Uses only small amount of water in production; yields no hazardous wastes. Paint prep can be extremely lean.

Consistently good shape. Coils are leveled with tension to remove bow, edge wave and coil breaks. Sheets are flattened to remove most shape issues.

Inherits coloration of base hot-rolled - shadowed, blued appearance and discoloration where rust is removed. Variations cannot be seen after painting.

## MATERIAL DEFINITION

## RUST RESISTANCE

## SMOOTHNESS

## CLEANLINESS

## IMPACT ON ENVIRONMENT

## SHAPE

## COLOR

Hot-rolled is pickled in acid to remove scale, then coated with an oil film.

Oil film applied to prevent rusting. After oil removed, will rust rapidly if not painted or coated. Pickled dry rusts very quickly.

Varies based on the production mill and steel specs

Coated with oil and has a 'pickling smut.'

Significant. Uses large amount of acid and energy in its production. Degreasers and solvents needed to clean/prepare to paint.

Poor to fair shape. Variation based on metallurgy, mill production conditions and leveling (if any), but P&O shape is usually same as incoming hot-rolled.

Consistent shade of silver-gray.

# THE REAL SCS ADVANTAGE COMES IN SHOP OPERATIONS

A clean, smooth, consistent steel makes a huge difference in manufacturing productivity, especially when it replaces steel with an oil film. SCS advantages over P&O have been proven in laboratory tests and real-world fabricating shops. Most of these benefits appear the moment you start using SCS. For a few, you'll want to optimize process settings to capture maximum SCS advantage. We'll help. We've written guidelines for how to get the most from SCS - whether it's boosting laser speed or leaning out paint prep.

## LASER CUTTING

How does P&O's oil affect lasering? Dirt and oil causes beam diffraction, can fog the lens and foul exhaust filters faster.

The SCS surface is so smooth and clean that laser and plasma cutting speed can be increased as much as 35%, while 'springback' is reduced or, in some cases, even eliminated.

- **speed increases of 20 to 35% boost productivity of laser operations.**
- **superb quality in cut, pierce and marking.**



The 'SCS Lasering Guidelines' help you optimize laser setup for increased speed with SCS. See [www.scsprocess.com](http://www.scsprocess.com) or contact your SCS sales rep.

## WELDING

Oil is tough on welders: it attracts excess dirt to wipe off, degrades weld integrity, increases the level of hazardous fumes.

Clean SCS welds better, giving a more uniform, stronger bead. SCS has no oil smoke so metallic particulates disperse much less - important for safeguarding your welders' respiratory health.

- **SCS welds tested 20% stronger than P&O welds in shear strength tests.**
- **30% savings in filler wire over P&O.**



'SCS Welding Guidelines' give you settings and suggested consumables to optimize SCS welding. See your SCS sales rep or [www.scsprocess.com](http://www.scsprocess.com).

## PREP & PAINTING

P&O steel needs expensive, multi-stage pretreatment before painting. Anything less degrades its corrosion resistance.

A lean 2-stage rinse is all that's needed to prep SCS for many applications. Smooth SCS yields a superior finish for high gloss paints and better corrosion resistance.

- **SCS process removes surface rust, yielding a highly paintable surface.**
- **big savings from 'leaner' paint prep with no phosphating stages.**



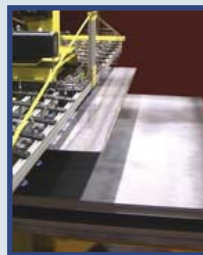
See 'SCS Paint Prep Guidelines' for SCS rinse regimen. Note that SCS surface 'shadows' - even from removed rust - do not show through the paint.

## MATERIAL HANDLING

P&O's oil gums up tools and machines. It makes blanks stick together, which shuts down destackers and production lines. It attracts dirt, fouling up your entire shop.

With SCS, machines, uniforms and work areas all stay much cleaner. You buy less solvent and gloves, plus avoid handling accidents from slippery sheets of P&O.

- **less time, money lost to cleaning.**
- **P&O oil is a cause of skin irritation - a switch to SCS solves the problem.**



Visit [www.scsprocess.com](http://www.scsprocess.com) to use 'SCS Savings Estimator.' It's an interactive calculator that shows you the cost P&O's oil imposes on your shop.

## TUBE PRODUCTION

Tubes made from P&O require extensive cleanup prior to welding, fabricating, or coating/painting.

SCS tubes, structural or mechanical, can be ready to weld right off the mill, ready to paint right off the mill. The SCS shape, with no edge wave, and SCS cleanliness yields a better, more uniform seam weld.

- **in trials to date, SCS welds faster than P&O, so tube mills may run faster.**



## BENDING & FORMING

SCS in rollforming and pressbrake work performs beautifully. With no oil, there's no 'slip' in tooling and its smooth surface yields consistent final product shapes.

For bends of 30% or more, some breaking loose of surface scale on the inside radius is expected. Loose scale is easily wiped or rinsed away and paint adherence is not diminished. Scale on outer radii shouldn't break loose and there's no microcracking.



*For more information on using SCS in these or other processes, please contact us to discuss your needs.*

## OTHER PROCESSES

**Stamping** SCS lets lubricant contact the steel, rather than a film of oil, so it works optimally. P&O stamped parts have areas that rust, but SCS prevents such rusting.

**Punching** and turret work on SCS shows no difference from P&O, including tool life.

**Grinding** SCS keeps grinding tools from getting 'gummed up' with P&O's oil. See our 'Guidelines for Grinding SCS'.

