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.

<table>
<thead>
<tr>
<th>SCS</th>
<th>P&amp;O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot-rolled that is mechanically brushed.</td>
<td>Hot-rolled is pickled in acid to remove scale, then coated with an oil film.</td>
</tr>
<tr>
<td>Inhibits rusting without any coating or protection. SCS process removes existing surface rust from hot-rolled coils or sheets.</td>
<td>Oil film applied to prevent rusting. After oil removed, will rust rapidly if not painted or coated. Pickled dry rusts very quickly.</td>
</tr>
<tr>
<td>Typically 15 microinches better than P&amp;O.</td>
<td>Varies based on the production mill and steel specs</td>
</tr>
<tr>
<td>Extremely clean - less than 10% gray scale.</td>
<td>Coated with oil and has a ‘pickling smut.’</td>
</tr>
<tr>
<td>None. Uses only small amount of water in production; yields no hazardous wastes. Paint prep can be extremely lean.</td>
<td>Significant. Uses large amount of acid and energy in its production. Degreasers and solvents needed to clean/prep to paint.</td>
</tr>
<tr>
<td>Consistently good shape. Coils are leveled with tension to remove bow, edge wave and coil breaks. Sheets are flattened to remove most shape issues.</td>
<td>Poor to fair shape. Variation based on metallurgy, mill production conditions and leveling (if any), but P&amp;O shape is usually same as incoming hot-rolled.</td>
</tr>
<tr>
<td>Inherits coloration of base hot-rolled - shadowed, blued appearance and discoloration where rust is removed. Variations cannot be seen after painting.</td>
<td>Consistent shade of silver-gray.</td>
</tr>
</tbody>
</table>
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.*

**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.*

**PREP & PAINTING**

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

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

**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 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'.