

Temperature Maximum Values

How to prove or permanently record exceeded temperature levels in an easy, economic and precise $\pm 1\%$ method ?

With the temperature recording labels, of course!

CelsiClock®
CelsiStrip®



CelsiClock®



CelsiStrip®

The temperature sensitive indicating fields on the label change permanently from original white to an irreversible (for ever) black once their specific rated temperature level is exceeded for a second, or less.

A selection of forty different temperature levels between $+40^{\circ}$ and $+260^{\circ}\text{C}$ ($+105^{\circ}\text{F}$ and $+500^{\circ}\text{F}$) is available to choose from.

Various temperature level sequenced self-adhesive labels are available as CelsiStrip®, MiniCelsiStrip® or as CelsiClock®.

Single temperature level self-adhesive labels are available as CelsiDot® or as CelsiPoint®.



MINI-CelsiStrip®

CelsiStrip C-S-E	with 8 different temperature levels per label, rectangular size 45 x 15 mm °C and °F print																				210 216 224 232 241 249 254 260
CelsiStrip C-S-D																					166 171 177 182 188 193 199 204
CelsiStrip C-S-C																					121 127 132 138 143 149 154 160
CelsiStrip C-S-B																					77 82 88 93 99 104 110 116
CelsiStrip C-S-A	40 43 46 49 54 60 65 71																				
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260																				
temperature °F	105 110 115 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 435 450 465 480 490 500																				

CelsiStrip CS 232/260	with 5 different temperature levels per label, rectangular size 45 x 15 mm °C and °F print																				232 241 249 254 260
CelsiStrip CS 199/224																					199 204 210 216 224
CelsiStrip CS 171/193																					171 177 182 188 193
CelsiStrip CS 143/166																					143 149 154 160 166
CelsiStrip CS 116/138																					116 121 127 132 138
CelsiStrip CS 088/110																					88 93 99 104 110
CelsiStrip CS 060/082	60 65 71 77 82																				
CelsiStrip CS 040/054	40 43 46 49 54																				
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260																				
temperature °F	105 110 115 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 435 450 465 480 490 500																				

CelsiStrip CS 199/254	with 5 (6) different temperature levels per label, rectangular size 45 x 15 mm °C and °F print																				199 210 224 241 254
CelsiStrip CS 143/188																					143 154 166 177 188
CelsiStrip CS 088/132																					88 99 110 121 132
CelsiStrip CS 054/088	54 65 71 77 82 88																				
CelsiStrip CS 040/077	40 43 54 65 77																				
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260																				
temperature °F	105 110 115 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 435 450 465 480 490 500																				

Packagings available:
CelsiStrip®, **CelsiClock®** in booklets with each 10 strips or on rolls with each 1000 strips.
CelsiDot®, **CelsiPoint®** in booklets with each 24 labels or on rolls with each 1200 labels.
CelsiMiniStrip® on a release paper with each 180 identical MiniStrip's per sheet.

manufactured by:
DIPL.ING. ERNEST SPIRIG
POBOX 1140 CH-8640 RAPPERSWIL SWITZERLAND
PHONE: (+41) (0)55 27 44 03 TELEX: 875 400 TELEFAX: (+41) (0)55 27 53 69

CelsiClock CC 232/260	232 241 249 254 260
CelsiClock CC 199/224	199 204 210 216 224
CelsiClock CC 171/193	171 177 182 186 193
CelsiClock CC 143/166	143 149 154 160 166
CelsiClock CC 116/138	116 121 127 132 138
CelsiClock CC 088/110	88 93 99 104 110
CelsiClock CC 060/082	60 65 71 77 82
CelsiClock CC 040/054	40 43 46 49 54
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260

with 5 different temperature levels per label,
circular size ø 14 mm
°C print only



with 4 different temperature levels per label,
rectangular size 3 x 10 mm
°C print only



Mini Strip CSM 077/093	77 82 88 93
Mini Strip CSM 060/093	60 71 82 93
Mini Strip CSM 054/071	54 60 66 71
Mini Strip CSM 040/049	40 43 46 49
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260

CelsiDot CD- ... °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260
CelsiPoint CP- ... °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260
temperature °C	40 43 46 49 54 60 65 71 77 82 88 93 99 104 110 116 121 127 132 138 143 149 154 160 166 171 177 182 188 193 199 204 210 216 224 232 241 249 254 260
temperature °F	105 110 115 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 300 310 320 330 340 350 360 370 380 390 400 410 420 435 450 465 480 490 500

with only 1 temperature level per label,
rectangular size 10 x 14 mm
°C and °F print



with only 1 temperature level per label,
circular size ø 10 mm
°C print only



CD- ... temperature °C

CP- ... temperature °C

CelsiStrip®, CelsiDot®, CelsiPoint®, CelsiPel®, CelsiLack® and CelsiMeter® are international registered trademarks of
Dipl.-Ing. Ernest Spring CH-8640 Rapperswil
Switzerland

distributed by:

TPX500 53 p 2

Packagings available:
CelsiStrip®, CelsiClock® in booklets with each 10 strips or on rolls with each 1000 strips.
CelsiDot®, CelsiPoint® in booklets with each 24 labels or on rolls with each 1200 labels.
CelsiMiniStrip® on a release paper with each 180 identical MiniStrip's per sheet.

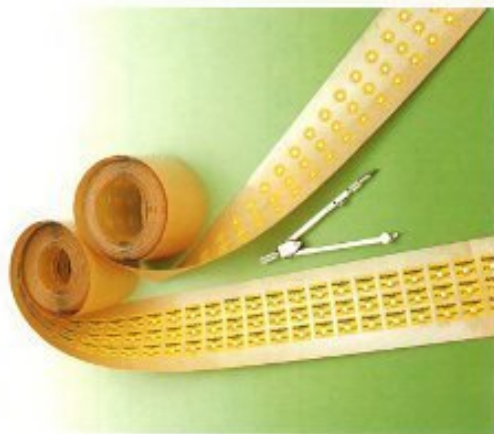
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With the temperature recording labels, of course!

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A selection of forty different temperature levels between +40 °C and +260 °C (+105 °F and +500 °F) is available to choose from.

The CelsiDot®- and the CelsiPoint® labels are self-adhesive, single temperature level indicating stickers.



CelsiPoint®

3S-Wick®

US. Patent Nos.
4,081,575
4,078,714
4,133,291

® Reg. Trademark of Spirig

de-solder braids

for solder removing jobs, whether delicate, intricate or routine

3S-Wick® low cost per de-solder operation **3S-Wick®** is vacuumized

3S-Wick® production technology is so unique it's patented.

The patented vacuumization process yields an unequalled smooth flux layer for fast action and virtually unlimited shelf-life.

3S-Wick® patented vacuumization technology is chosen by leading organizations like in Japan by Matsushita Electric (NATIONAL brand), in Europe by Philips, ITT, Multicore Solders, Tandy, Cooper Industries, etc. and in Australia by Cooper Industries.

Vacuumization yields a high-speed reaction wick for quickest and safest de-soldering. A simultaneous comparison dip-test with competitive wicks will show the differences. MIL-STD-202E Method 208C.

3S-Wick® flux is based on mildest non-corrosive, non-hygroscopic, non-conductive rosin.

3S-Wick® conforms to the most stringent soldering standards set worldwide i.e. DIN-8516, DIN-8527, DIN-8511-F-SW32 (German), BS-441, DTD-599A (British), JIS-C-2519, JIS-C-2512 (Japanese), ASTM-B284, NASA Publications MIL-F-14256D type W and A, NPC-200-4 Quality Publication, NASA-SP5002 Soldering Electrical Connections, NASA-NHB-5300 Reliability and Quality Assurance Publications, and others.

3S-Wick® is used and has been used for the most demanding de-soldering operations in spacecraft and military electronics. Residues can be left safely on work.

3S-Wick® is easy in application. Press **3S-Wick®** with hot iron tip on solder joint and when solder melts and after solder is drawn into the wick end, lift simultaneously wick and tip from joint. Joint is clean from solder and ready for resoldering either immediately or later.

The minimal flux residue from **3S-Wick®** is



designed to be a surface protectant after de-soldering against loss of solderability of that joint.

Flux is absolutely safe

Proof: Sensitive copper braid surface unaffected by year long "influence" of its flux coating.

Switzerland
SPIRIG

3S-Wick® is available in four optimally arranged sizes for almost any de-soldering job. 3S-Wick® is available on spools with 1.5 m, 15 m, 25 m or 300 m length.

Size	Identification colour	Width approx.	Spool length available	Application	Recommended minimum iron wattage. Temperature controlled irons and screw-driver shaped tips preferred
00	white	0.03 in. 0.80 mm	1.5 m 25 m 300 m	very fine miniature solder joints	starting at 20 Watt
AA	yellow	0.06 in. 1.50 mm	1.5 m 25 m 300 m	fine solder joints	starting at 30 Watt
AB	green	0.08 in. 2.20 mm	1.5 m 25 m 300 m	medium solder joints	starting at 50 Watt
BB	blue	0.10 in. 2.70 mm	1.5 m 15 m 300 m	large solder joints	starting at 80 Watt

Why is it advantageous to remove solder by 3S-Wick®?

Wicking avoids damaging and life reducing heat shocks to components, printed circuit boards copper tracks (peel off danger if overheated) and surrounding components. Wicking also protects these parts against excessive temperatures of idling mechanical solder suckers. 3S-Wick® is made from high heat conductive copper. The cold 3S-Wick® end is pressed with the hot soldering iron tip on solder to be absorbed. The cold wick and cold solder increase now gradually in temperature. There is no sudden temperature increase with large temperature gradients causing extreme thermal stress. When wick and solder rise to the melting temperature range of solder, the solder liquefies and is almost instantaneously drawn by capillary forces into the wick, like ink into a blotter. Wick and tip are now simultaneously lifted. The wick end with the absorbed solder is cut off preparing for the next de-solder operation.

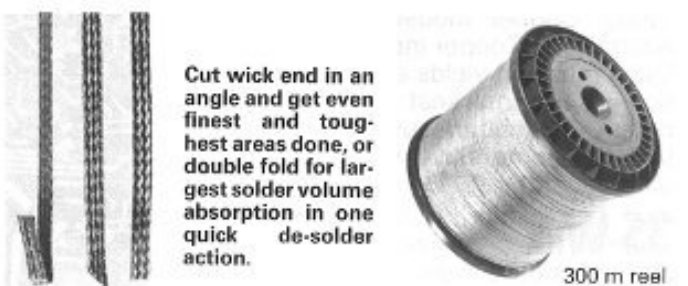
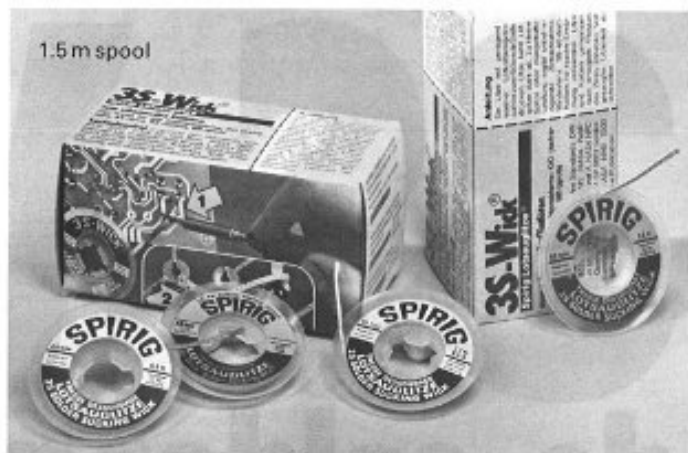
3S-Wick® is made from high heat conductive copper and protects therefore against those "deadly" hot idling iron tip temperatures.

The extreme heat conductive copper of 3S-Wick® naturally cools down the solder tip.

Too small a solder tip in comparison to the 3S-Wick® size will cause the temperature to drop too low. The resulting temperature of the wick end, solder and tip might even fall under the melting point of the solder. Naturally such a combination will not give a satisfactory result. If the temperature drops below the melting temperature then it will rise only slowly by the wattage heating of the iron. The de-soldering operates slowly. The size of tip should be capable of storing sufficient heat to result in a temperature above melting point. Wicking uses the stored heat in the tip to permit quick heat up of the cold wick and solder. The stored heat should permit sufficient temperature increase of wick and solder to give a continuous, undelayed one-cycle de-soldering.

3S-Wick® technology provides the fast flux response to permit capillary forces undelayed action.

De-soldering by wicking means actually soldering the wick with the unwanted solder, removing it from one place into the wick end. The solderability of the wick is therefore a direct quality indicator. How do you test solderability to compare different makes of wicks? MIL-STD-202E Test Methods for Electronic and Electric Components Parts, Method 208C Solderability, figure 208-1 refers.



Test-method for quality comparison of wicks:

Take a solder pot, preferably a thermostatic temperature controlled one (Cooper provides a small pot to be put into iron like a tip). Clamp wicks to be compared parallel into holder (eg pliers), cut them the same length, wipe off oxide layer on molten solder surface and now dip simultaneously the wick ends into molten solder.

A simultaneous dip test might result as shown.

3S-Wick® uniform flux coating will not peel off from strand surfaces by bending or squeezing the wick, which in practice can not be avoided.

Inspect and compare with a magnifier the flux coatings. 3S-Wick® flux coating is almost invisible by its smoothness. Do you see a flaky surface on other wicks?

Bend and squeeze wicks and watch flux particles falling off. Such exposed flux-free braid surfaces will be attacked by atmosphere and lose solderability.

3S-Wick® flux coating adheres extremely to the wicks surface and will withstand mechanical influences. The decision which wick will serve you best is yours.

3S-TIP® Super +

Long-life soldering tips for Weller® soldering irons WTCP and WEC. Detailed literature on request.

