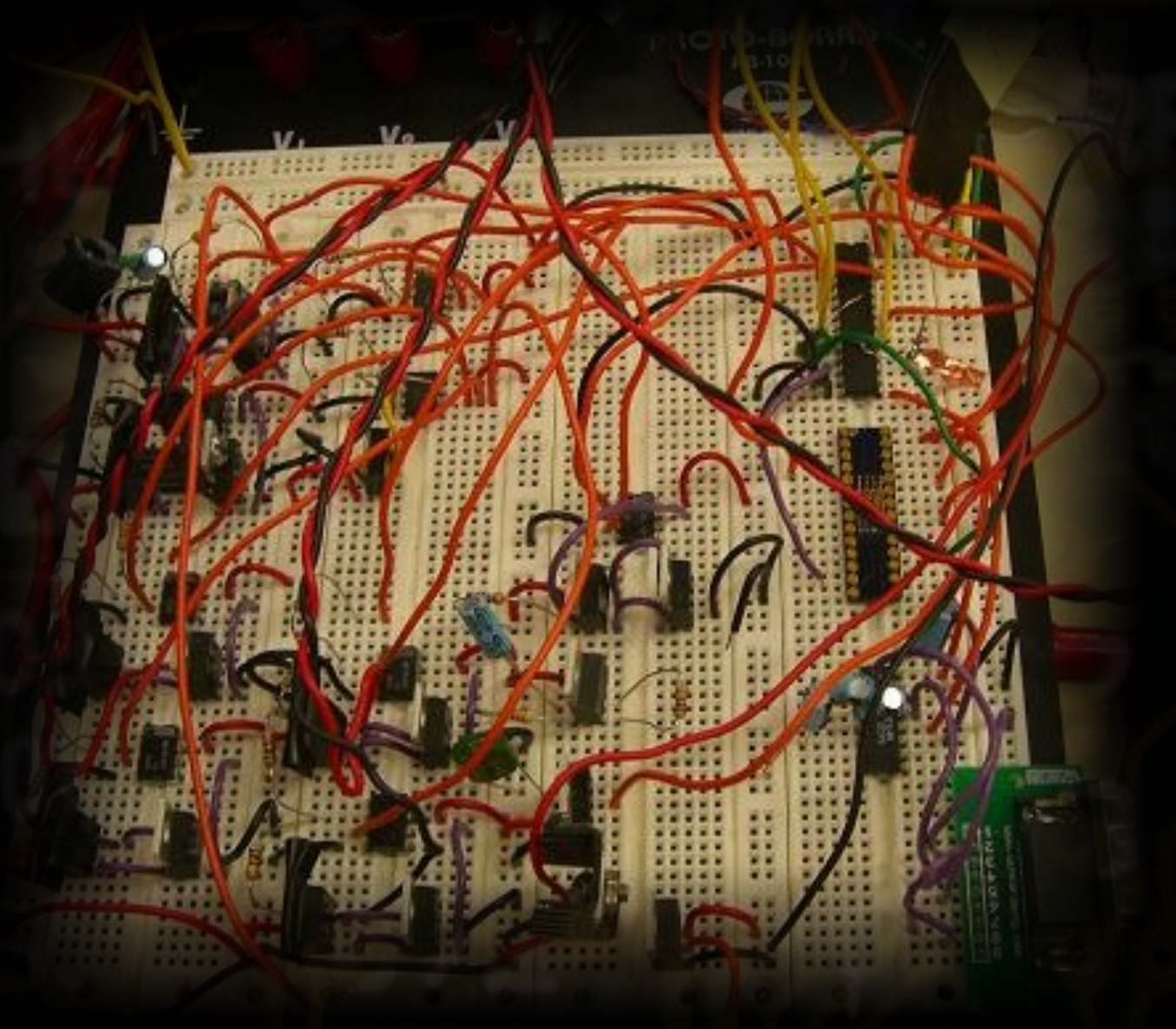
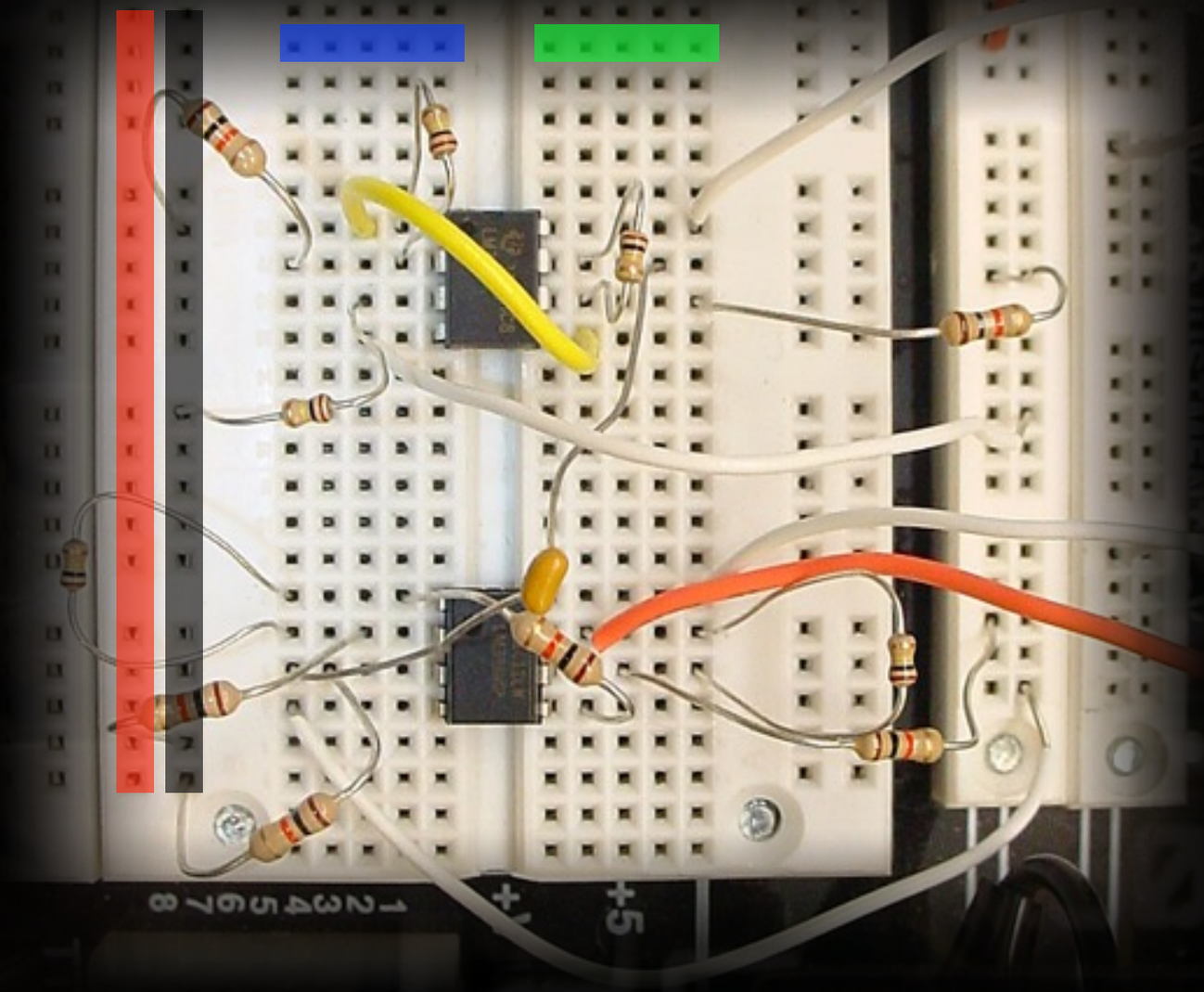
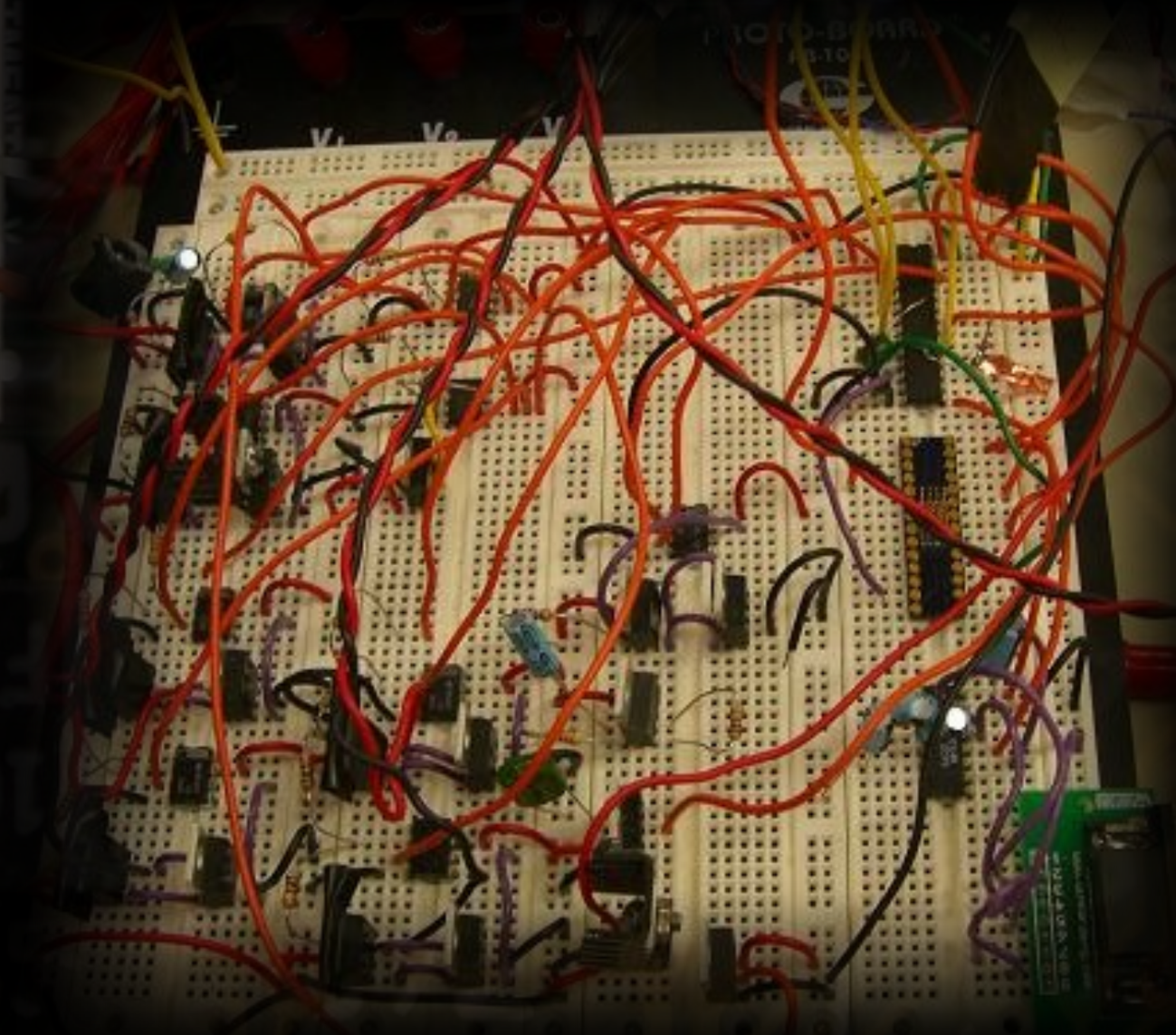
# Prototyping Circuits

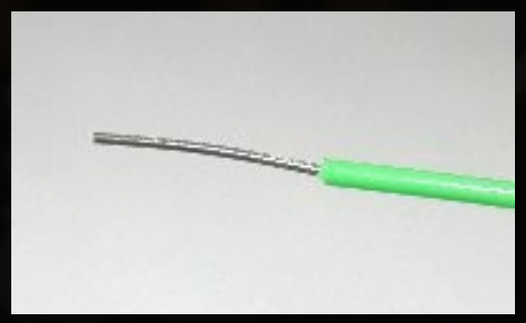


# solderless breadboards

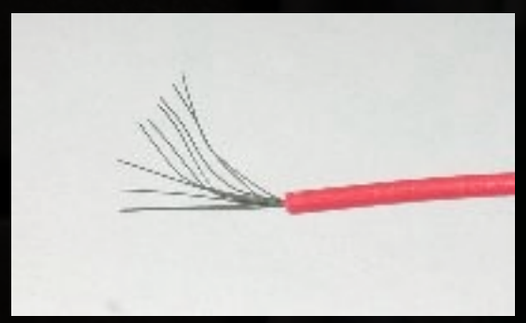




Solid-core



Stranded



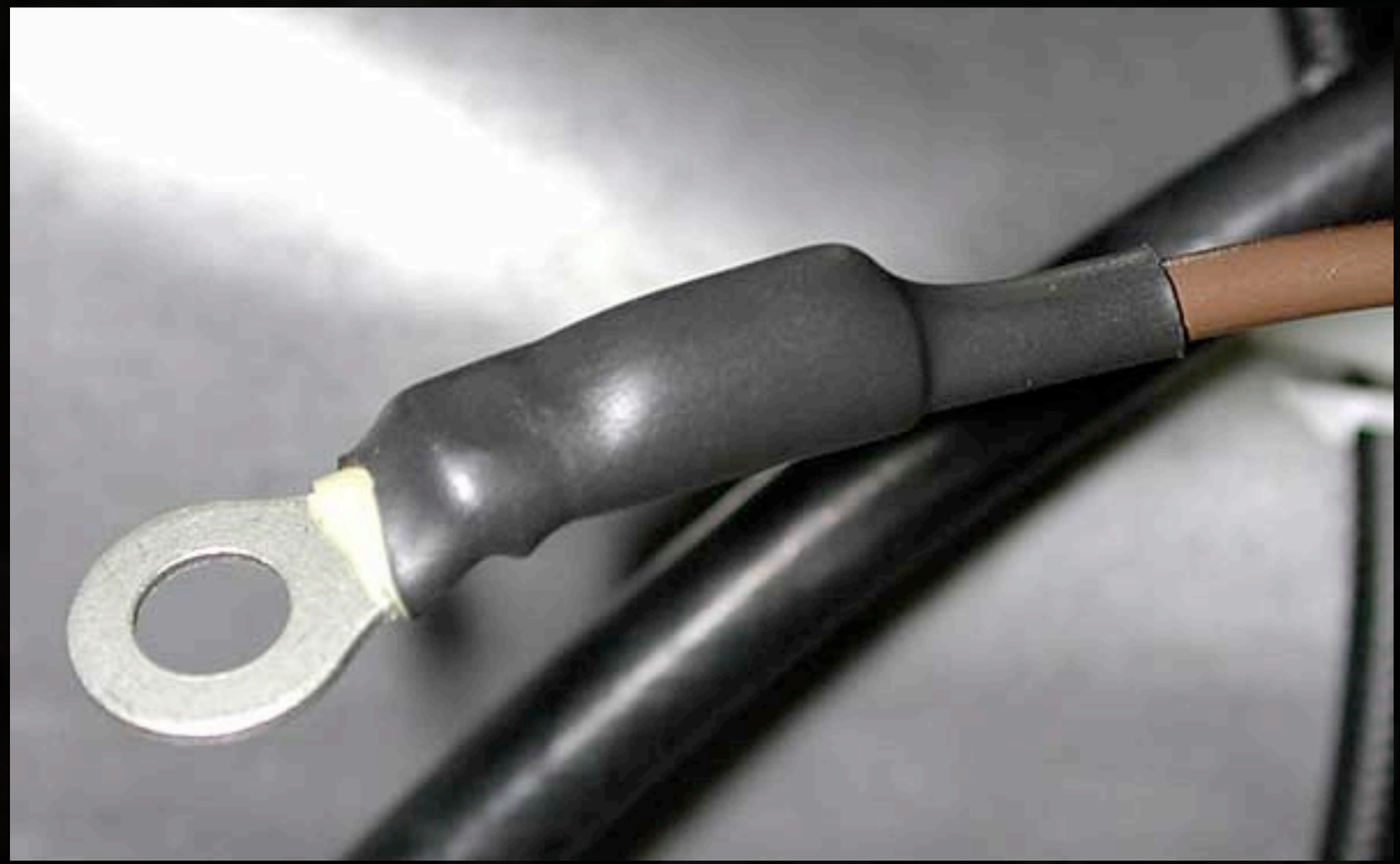
Current capacity

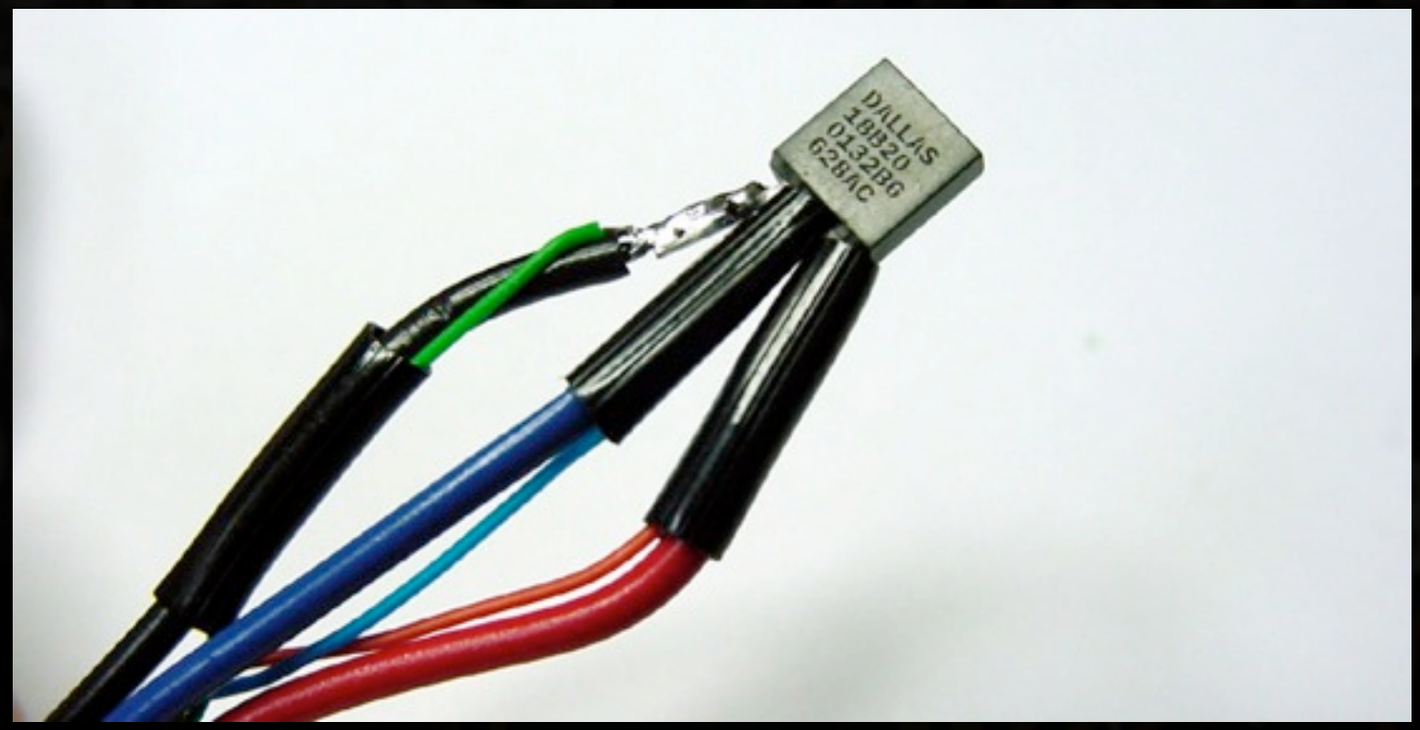
Pliability & fatigue

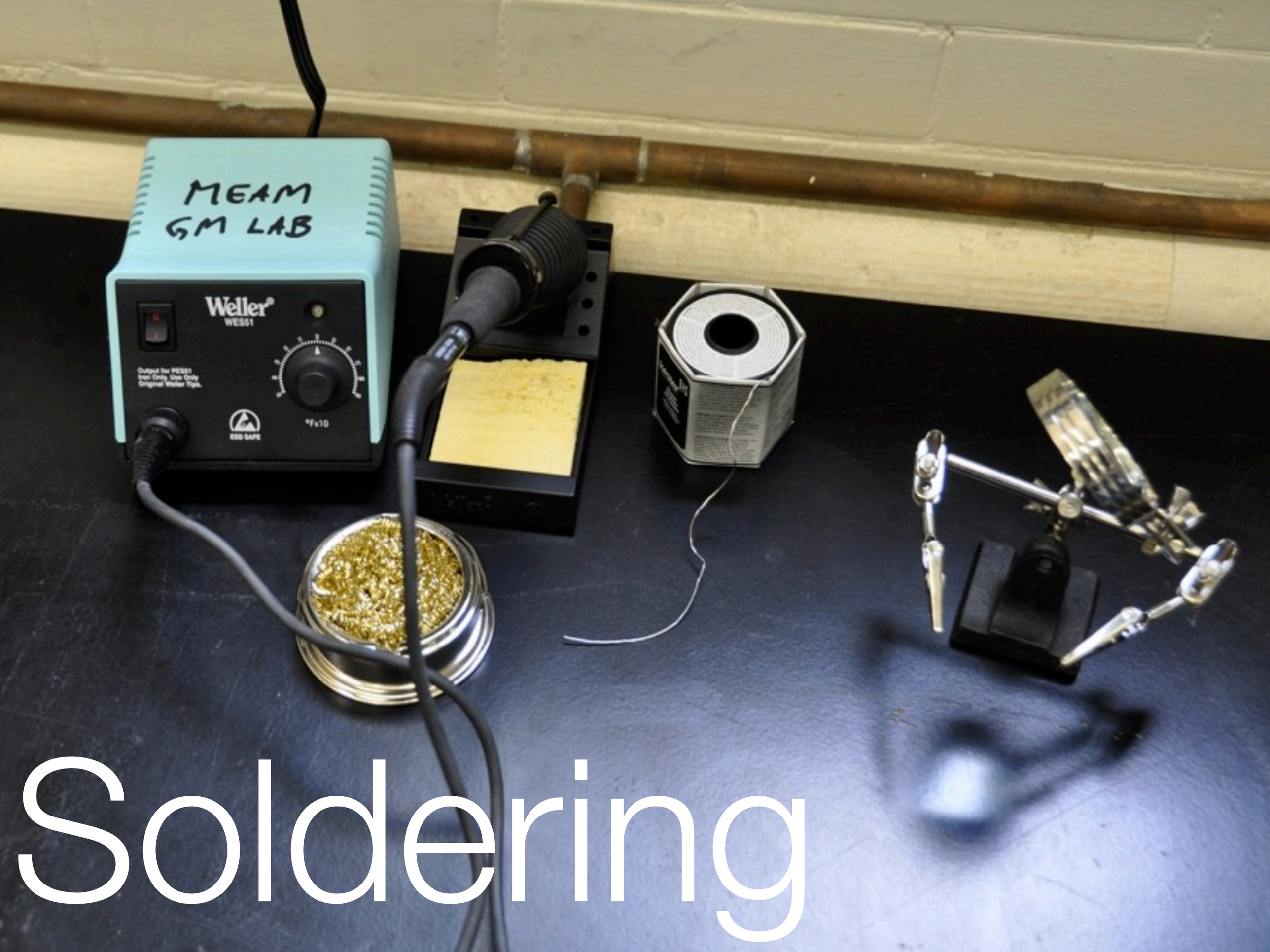
Use heat shrink

Use strain relief

| AWG | Dia. (thou) | Ohms/ 1000ft | Current (A) | Fusing Current |
|---|---|---|---|---|
| 12 | 80.8 | 1.619 | 9.33 | 235 |
| 13 | 72 | 2.042 | 7.4 | 197 |
| 14 | 64.1 | 2.575 | 5.87 | 166 |
| 15 | 57.1 | 3.247 | 4.65 | 140 |
| 16 | 50.8 | 4.094 | 3.69 | 117 |
| 17 | 45.3 | 5.163 | 2.93 | 98.4 |
| 18 | 40.3 | 6.51 | 2.32 | 82.9 |
| 19 | 35.9 | 8.21 | 1.84 | 69.7 |
| 20 | 32 | 10.35 | 1.46 | 58.4 |
| 22 | 25.3 | 16.46 | 0.918 | 41.2 |
| 24 | 20.1 | 20.76 | 0.577 | 29.2 |
| 26 | 15.9 | 41.62 | 0.363 | 20.5 |
| 28 | 12.6 | 66.17 | 0.228 | 14.4 |
| 30 | 10 | 105.2 | 0.144 | 10.2 |




DALLAS
18B20
0132B6
628AC




# Soldering

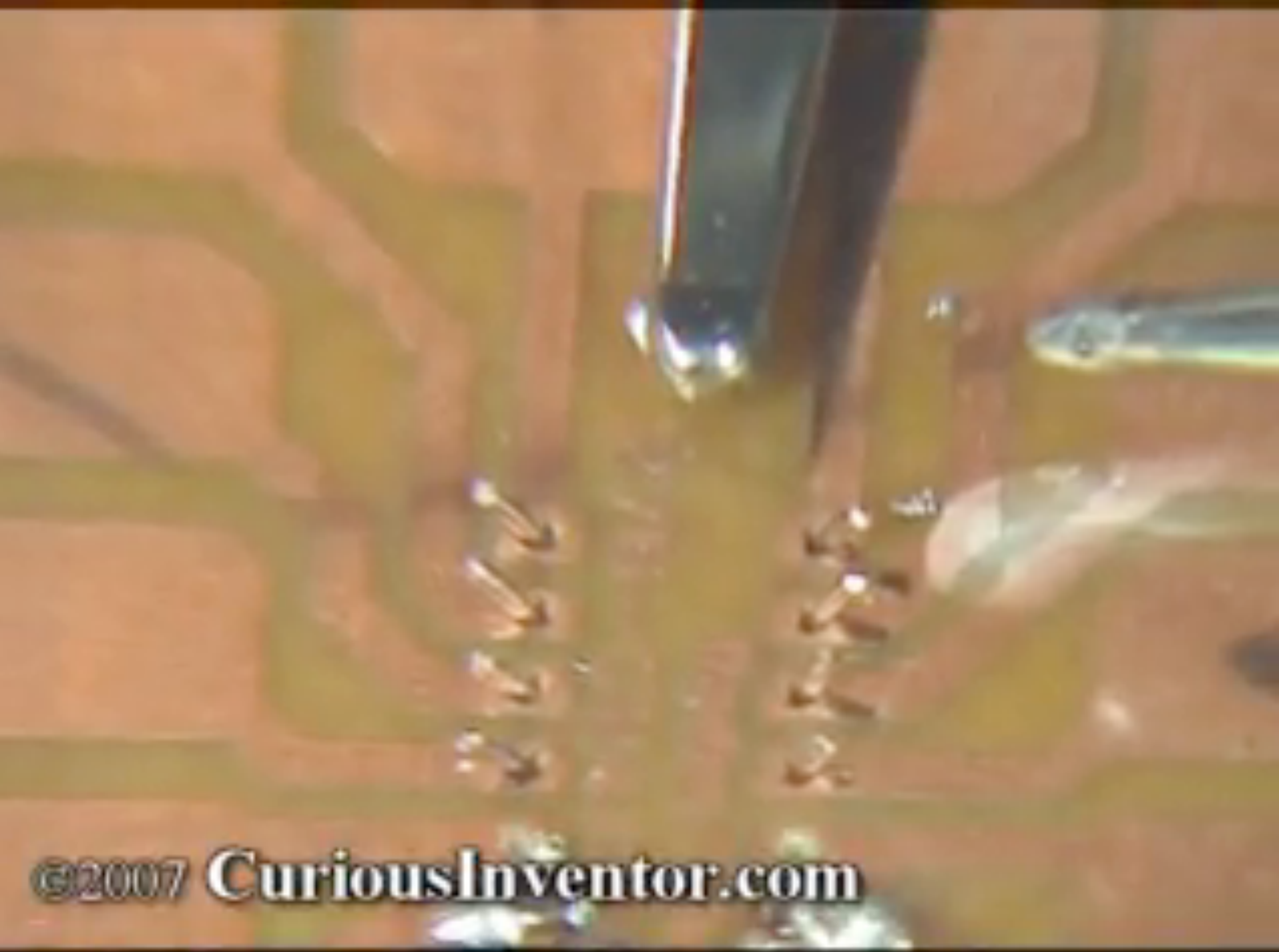
clean tip

clean surfaces

heat shrink on first!

heat target

tin your wires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# working with stranded-core wire

# working with stranded-core wire

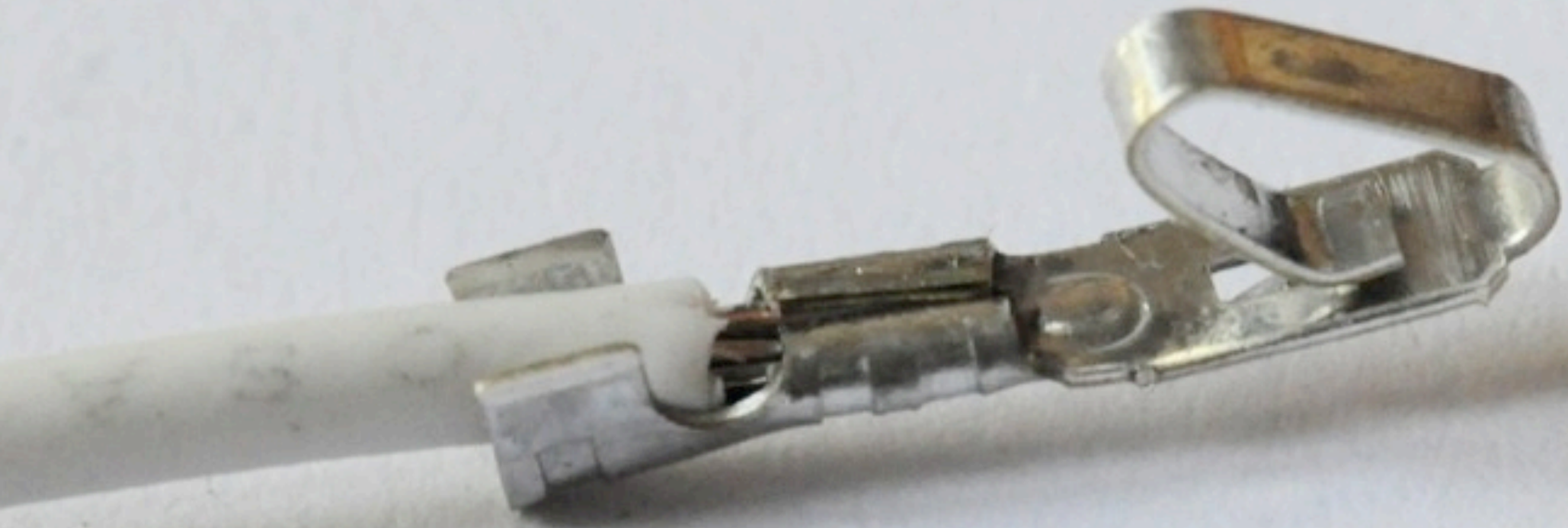
# tinning stranded-core wire

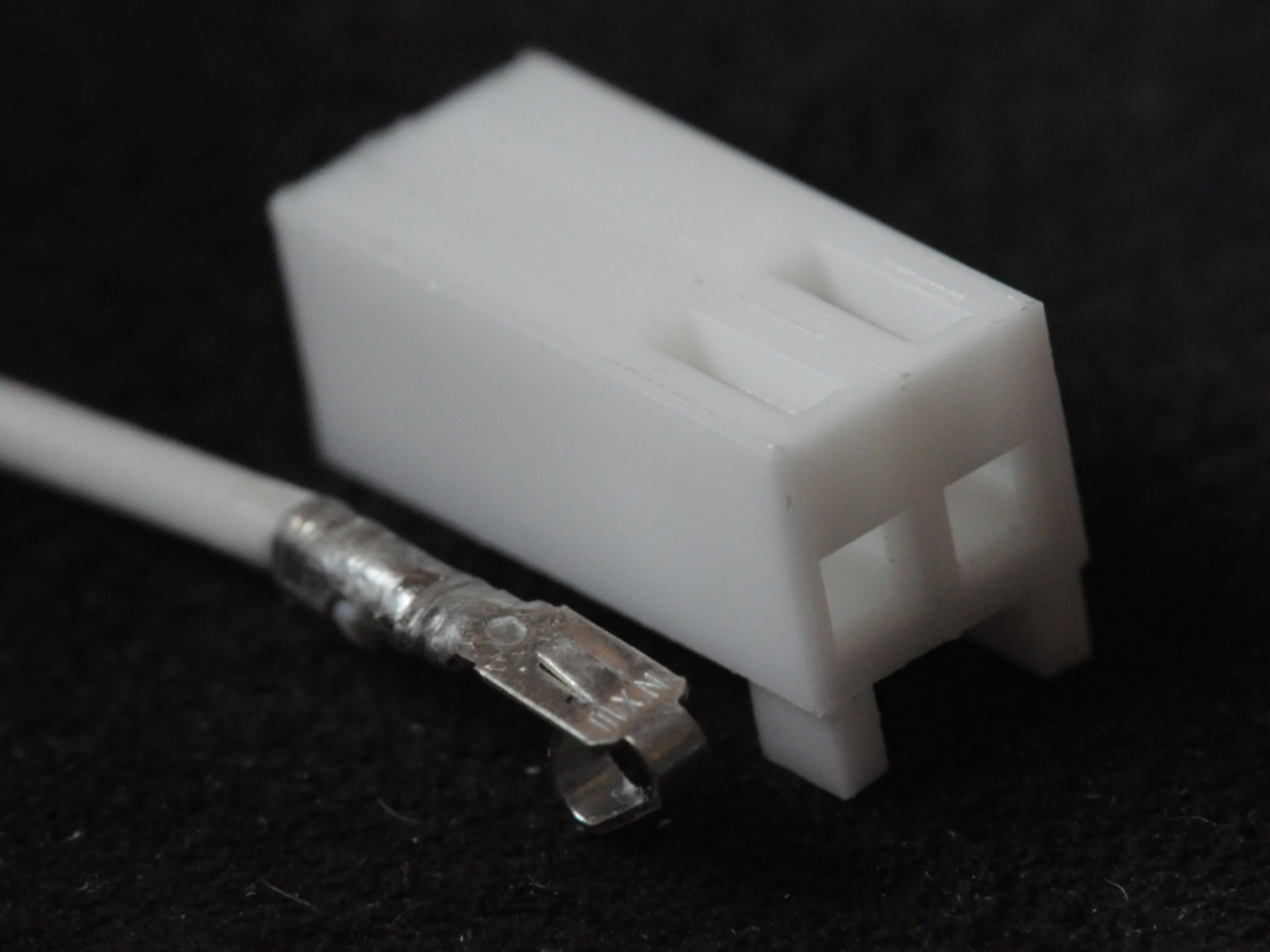
# Connections

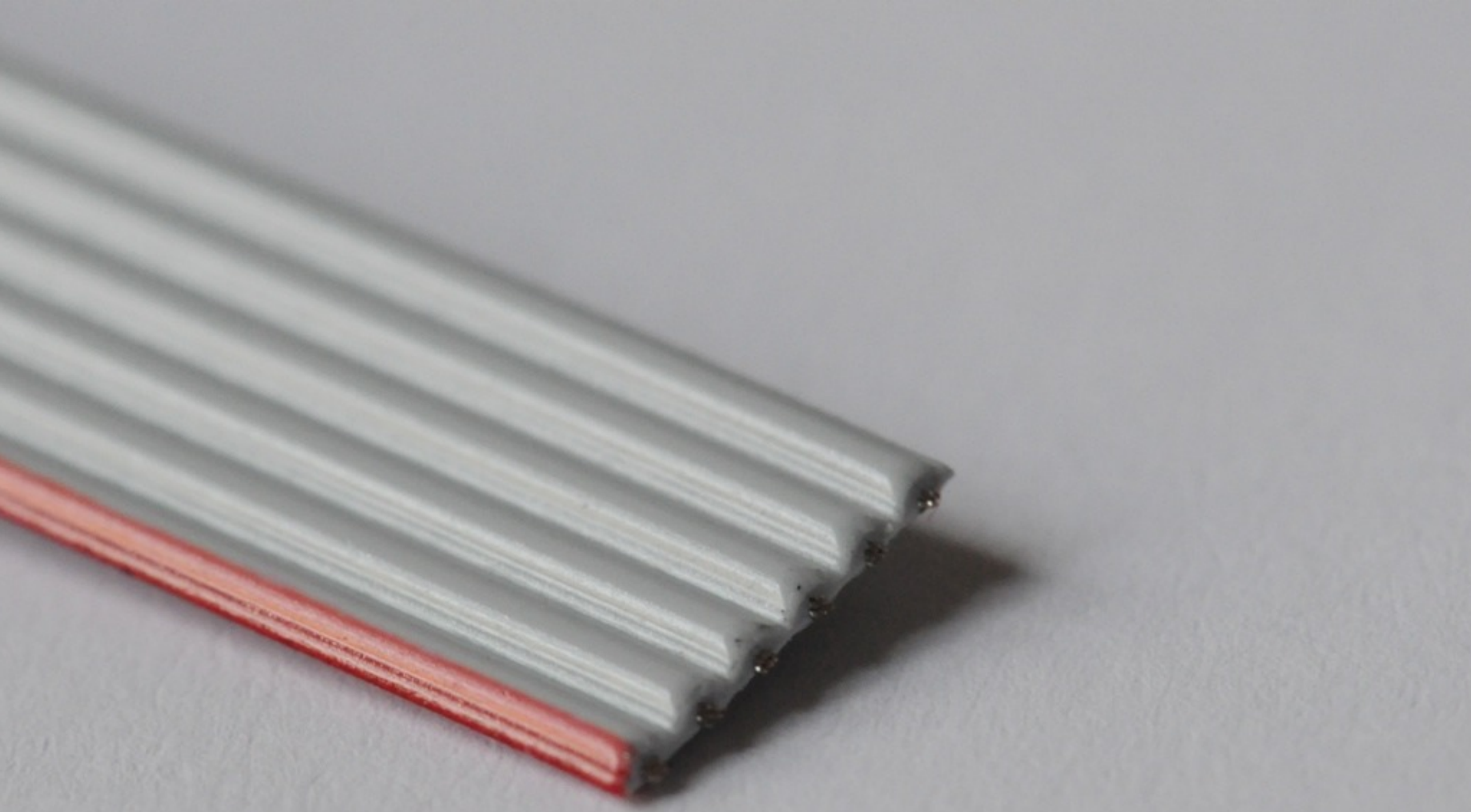

Molex


CONDUC
(mm)
1.6
2.0
1.4
1.8
2.3

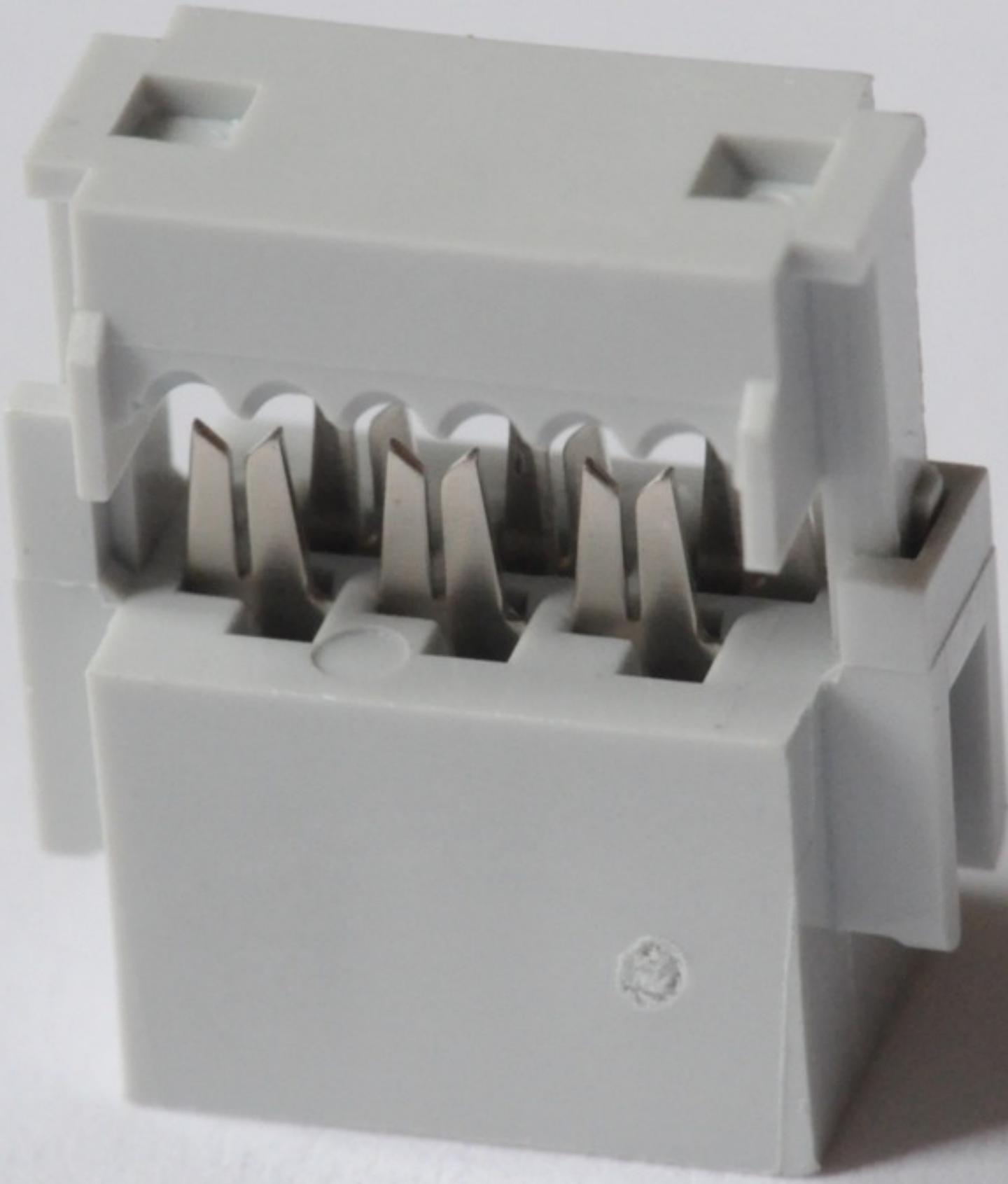

1.4
1.8
2.3

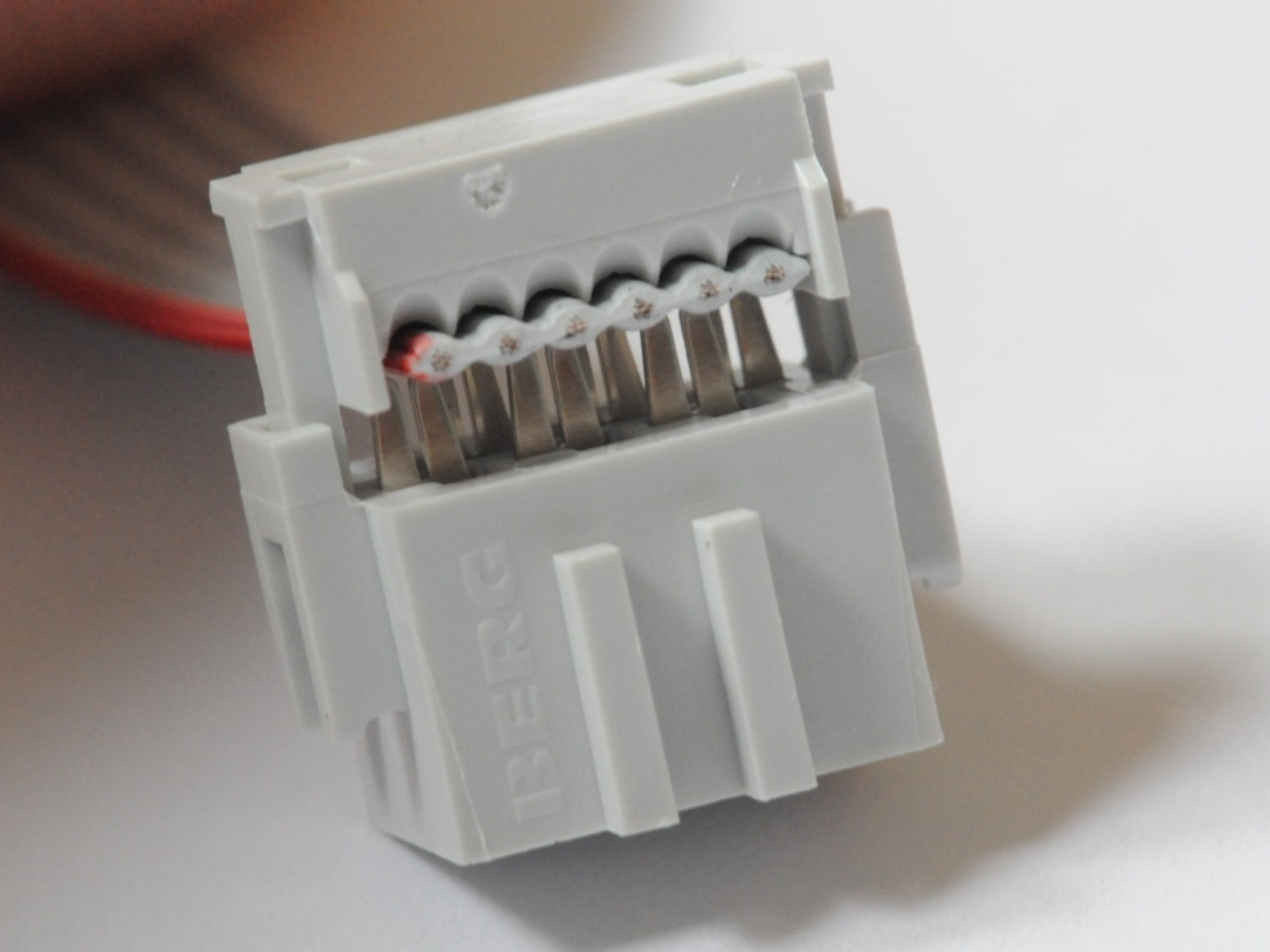


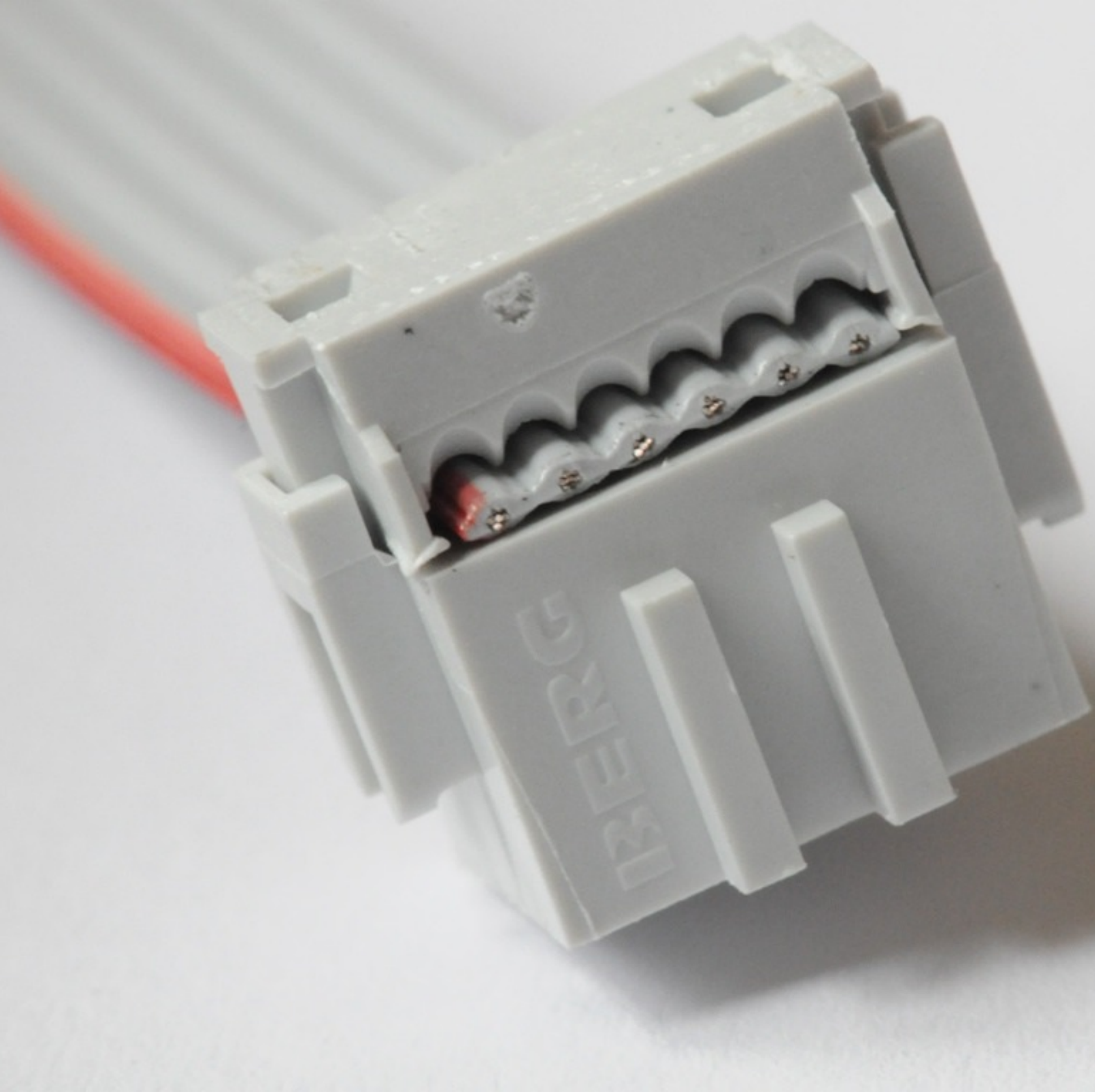




# Ribbon Cable




PEPCO


BERG