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| **FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY** |
| **Operations** | **Electrode Size 1/32 in.** | **Arc Current** | **Minimum\* Protective Shade** |
| Shielded metal arc welding | Less than 3 | Less than 60 | 7 |
|   | 3–5 | 60–160 | 8 |
|   | 5–8 | 160–250 | 10 |
|   | More than 8 | 250–550 | 11 |
| Gas metal arc welding and flux cored arc welding |   | less than 60 | 7 |
|   |   | 60–160 | 10 |
|   |   | 160–250 | 10 |
|   |   | 250–500 | 10 |
| Gas Tungsten arc welding |   | less than 50 | 8 |
|   |   | 50–150 | 8 |
|   |   | 150–500 | 10 |
| Air carbon | (Light) | less than 500 | 10 |
| Arc cutting | (Heavy) | 500–1000 | 11 |
| Plasma arc welding |   | less than 20 | 6 |
|   |   | 20–100 | 8 |
|   |   | 100–400 | 10 |
|   |   | 400–800 | 11 |
| Plasma arc cutting | (light)\*\* | less than 300 | 8 |
|   | (medium)\*\* | 300–400 | 9 |
|   | (heavy)\*\* | 400–800 | 10 |
| Torch brazing |   |   | 3 |
| Torch soldering |   |   | 2 |
| Carbon arc welding |   |   | 14 |
| **FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY** |
| **Operations** | **Plate thickness- inches** | **Plate thickness- mm** | **Minimum\* Protective Shade** |
| Gas Welding: |   |   |   |
| Light  | Under 1/8 | Under 3.2 | 4 |
| Meduim  | 1/8 to ½ | 3.2 to 12.7 | 5 |
| Heavy  | Over ½ | Over 12.7 | 6 |
| Oxygen cutting: |   |   |   |
| Light  | Under 1 | Under 25 | 3 |
| Meduim  | 1 to 6 | 25 to 150 | 4 |
| Heavy  | Over 6 | Over 150 | 5 |
| \*As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade, which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.\*\*These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece. |