After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.

After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.

After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.

After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.

After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.

After 90 years in the business, Hobart Brothers in Welding And Submerged Arc Welding.

Push has changed in industry since 1920. Hobart Brothers is on top of the wave. You’ll love our range of products and services that make welding easier with our technology and processes.

It helps large teams. "When it comes to welding, it's all about the equipment. We've seen a lot of different types of equipment, and we know that Hobart's equipment is the best for the job," says a large team leader.

To locate your nearest Hobart distributor call 1-937-332-4000 or 1-937-332-5188.

Hobart Distributors

For Submerged Arc Welding

For Hobart Brothers, there is nothing more important than the people who use our products and services. That's why we work hard to ensure that our customers are satisfied every time they use our products. From the smallest job to the largest project, we are committed to providing our customers with the best possible experience.
**Principles of Operation**

The submerged arc welding process, introduced in the early 1930’s, was originally developed to weld low-alloy structural members in large pipes. This process was developed to provide high-quality weld metal deposits by utilizing the arc and its melting power to form weld metal from fill metal wires and flux. Submerged arc welding is designed to be operated at high speeds and high deposition rates with minimum arc visibility.

**Sub-Arc Advantages**

- High deposition and travel speed
- High quality welds
- Minimized arc visibility
- Excellent arc penetration
- Minimal slag contamination
- High deposition and travel speed

The submerged arc process is widely used in heavy plate fabrication. This includes the welding of:

- Steel bridges, buildings, and vessels
- Pipe - both longitudinal seams and circumferential welds
- Structural - bridge, building, and structure manufacturing

**Benefits of Metal Core Wire vs. Solid Wire**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Amperage</th>
<th>Deposition Rate</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32&quot;</td>
<td>400</td>
<td>30</td>
<td>11.2</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>450</td>
<td>31</td>
<td>12.1</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>450</td>
<td>36</td>
<td>22.0</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>500</td>
<td>36</td>
<td>30.7</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>500</td>
<td>37</td>
<td>17.8</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>600</td>
<td>35</td>
<td>19.5</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>650</td>
<td>36</td>
<td>23.0</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>700</td>
<td>38</td>
<td>23.8</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>800</td>
<td>40</td>
<td>29.8</td>
</tr>
</tbody>
</table>

**Classification for Carbon Steel Welds and Fluxes**

- **Weld Metal**
  - Metalloy 92-S: ECM1
  - Metalloy EM13K-S: ECF3
  - Metalloy 112-S: ECM3
  - Metalloy 100F3-S: ECF3
  - Metalloy 120-S: ECM4

- **Fluxes**
  - Metalloy HN-590 F7P4-EC1
  - Metalloy HN-590 F8P8-ECM1-M1
  - Metalloy HN-590 F10P4-ECF3-F3

**Characteristics of Weld Metal**

- Excellent chemical and mechanical properties
- Good weld bead shapes and toe lines
- Easily automated
- Minimal arc visibility
- High quality welds
- High deposition and travel speed

**Deposition Rate % Increases with Metal Core versus Solid Wire**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Amperage</th>
<th>Deposition Rate % Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/32&quot;</td>
<td>500</td>
<td>32</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>500</td>
<td>36</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>500</td>
<td>36</td>
</tr>
</tbody>
</table>

**Classification for Low-Alloy Steel Welds and Fluxes**

- Metalloy N1-S: ECM1
- Metalloy B2-S: ECM1
- Metalloy F2-S: ECM1

- **Fluxes**
  - Metalloy HN-590 F7P4-EC1
  - Metalloy HN-590 F8P8-ECM1-M1
  - Metalloy HN-590 F10P4-ECF3-F3

**Characteristics of Weld Metal**

- High deposition and travel speed
- High quality welds
- Minimized arc visibility
- Excellent arc penetration
- Minimal slag contamination
- High deposition and travel speed

**Composite Electrodes**

- **Deposition Rate**
  - 3/32" 400 30 11.2 10.9 (4.9)
  - 1/8" 450 31 12.1 11.8 (5.5)
  - 5/32" 500 36 22.0 21.4 (10.7)

**Composite Chemical Composition**

- Metalloy 92-S: ECM1
  - 0.60 - 1.60% Manganese, 1.25 - 2.00% Nickel
- Metalloy EM13K-S: ECF3
  - Carbon Steel
- Metalloy 112-S: ECM3
  - 0.90 - 1.80% Manganese, 1.80 - 2.60% Nickel
- Metalloy 100F3-S: ECF3
  - 0.70 - 1.10% Nickel, 0.40 - 0.65% Molybdenum
- Metalloy 120-S: ECM4
  - 1.30 - 2.25% Manganese, 2.00 - 2.80% Nickel

**Classification for Carbon Steel Electrodes and Fluxes**

- **Weld Metal**
  - Metalloy 92-S: ECM1
  - Metalloy EM13K-S: ECF3
  - Metalloy 112-S: ECM3
  - Metalloy 100F3-S: ECF3
  - Metalloy 120-S: ECM4

- **Fluxes**
  - Metalloy HN-590 F7P4-EC1
  - Metalloy HN-590 F8P8-ECM1-M1
  - Metalloy HN-590 F10P4-ECF3-F3

**Characteristics of Weld Metal**

- Excellent chemical and mechanical properties
- Good weld bead shapes and toe lines
- Easily automated
- Minimal arc visibility
- High quality welds
- High deposition and travel speed
Sub Arc Advantages

- Easier modified for special applications
- Greater tolerance to gaps, poor fit up, and burn through
- A wider, broader shaped penetration and fusion pattern
- Higher quality weld deposits
- Higher wire burnoff rates
- Increased deposition rates, typically 15-30% higher (See Table 1)

The submerged arc process is widely used in heavy plate fabrication. This includes the welding of:

- Heavy construction/mining/crane
- Railcar manufacturing
- Heavy machine components
- Pipe – both longitudinal seams and circumferential welds

Welded metal thickness ranges from a minimum of 1/16" (1.6mm) up to unlimited for single pass welds and unlimited metal thickness (Composite Electrodes)

Deposition Rate % Increase with Metal Cored versus Solid Wire

| Diameter | Amperage | Deposition Rate Increase
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32&quot;</td>
<td>400</td>
<td>30%</td>
</tr>
<tr>
<td>5/64&quot;</td>
<td>200</td>
<td>29%</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>300</td>
<td>29%</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>450</td>
<td>31%</td>
</tr>
</tbody>
</table>

**Submerged Arc Process**

The submerged arc welding process introduced in the early 1930’s was originally developed to weld longitudinal seams in large pipe. It was originally developed to weld longitudinal seams in large pipe.

**Granular Flux**

Granular flux is used in submerged arc welding to protect the weld puddle from the contaminating effects of the air through the melting of a blanket of molten flux.

Table 1

| Diameter | Amperage | Deposition Rate Increase
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32&quot;</td>
<td>400</td>
<td>30%</td>
</tr>
<tr>
<td>5/64&quot;</td>
<td>200</td>
<td>29%</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>300</td>
<td>29%</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>450</td>
<td>31%</td>
</tr>
</tbody>
</table>

**Composite Electrodes**

Composite electrodes are used in submerged arc welding to introduce a wire and flux combination.

| Diameter | Amperage | Deposition Rate Increase
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32&quot;</td>
<td>400</td>
<td>30%</td>
</tr>
<tr>
<td>5/64&quot;</td>
<td>200</td>
<td>29%</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>300</td>
<td>29%</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>450</td>
<td>31%</td>
</tr>
</tbody>
</table>

**Classification for Carbon Steel Weld Metals and Fluxes**

Example: F7A8-EC1 per AWS A5.17

**Classification for Low-Alloy Steel Weld Metals and Fluxes**

Example: F7A8-ECNi1-Ni1 per AWS A5.17

Contact Hobart Brothers for Charpy V-Notch Toughness
**Sub Arc Advantages**

- **High deposition rates**
- **Excellent chemical and mechanical properties**
- **Good weld bead shapes and toe lines**
- **High quality welds**
- **Easily modified for special applications**
- **Greater tolerance to gaps, poor fit up, and burn through**
- **Higher wire burnoff rates**
- **Increased travel speeds**
- **Increased deposition rates, typically 15-30% higher (See Table 1)**

The submerged arc process is widely used in heavy plate construction, mining, railcar manufacturing, heavy machine components, vessels and tanks for pressure storage use, and pipe – both longitudinal seams and circumferential welds.

**Principles of Operation**

The submerged arc welding process was introduced in the early 1930's and was originally developed to weld longitudinal seams in large pipe. The process was developed to provide high quality, fully dense, high productivity welds without the heat input of high heat input arc welding processes.

The process was developed to provide high quality weld metal with good penetration, acceptable cleaning and good weldability in the as-welded or post weld heat treated condition. The arc is covered by a blanket of granular flux. Contaminating effects of the air through the melting of a blanket of flux deposits by shielding the arc and the molten weld puddle from the contaminants of the air through the melting of a blanket of flux.

**Sub Arc Advantages**

- **Excellent chemical and mechanical properties**
- **Good weld bead shapes and toe lines**
- **High quality welds**

**Deposition Rate % Increase with Metal Core versus Solid Wire**

<table>
<thead>
<tr>
<th>Diameter (in)</th>
<th>Amperage</th>
<th>Feed Speed</th>
<th>Weld Metal</th>
<th>Deposition Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/32&quot;</td>
<td>300</td>
<td>29 85</td>
<td>96</td>
<td>116</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>450</td>
<td>31 76</td>
<td>135</td>
<td>230</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>500</td>
<td>31 76</td>
<td>190</td>
<td>320</td>
</tr>
<tr>
<td>3/16&quot;</td>
<td>600</td>
<td>35 135</td>
<td>190</td>
<td>320</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>800</td>
<td>42 143</td>
<td>230</td>
<td>400</td>
</tr>
</tbody>
</table>

**Classification for Carbon Steel Welds and Fluxes**

- **F7A8-EC1 per AWS A5.17**
- **FXXX - ECXXX**

**Classification for Low-Alloy Steel Welds and Fluxes**

- **FXXX - ECXXX - XX**

**Composite Chemical Composition**

- Metalloy 92-S: .60 - 1.60% Manganese, 1.25 - 2.00% Nickel, .35% Molybdenum
- Metalloy W-S: Chromium, Copper & Nickel Alloy for Weathering Steel
- Metalloy EM13K-S: Carbon Steel
- Metalloy F2-S: .40 - .80% Nickel, .40 - .65% Molybdenum
- Metalloy N1-S: .75 - 1.10% Nickel
- Metalloy B2-S: 1.00 - 1.50% Chromium, .40 - .65% Molybdenum
- Metalloy 100F3-S: .70 - 1.10% Nickel, .40 - .65% Molybdenum
- Metalloy 120-S: 1.30 - 2.25% Manganese, 2.00 - 2.80% Nickel, .30 - .80% Molybdenum
- Metalloy 92-S: .60 - 1.60% Manganese, 1.25 - 2.00% Nickel, .35% Molybdenum
- Metalloy W-S: Chromium, Copper & Nickel Alloy for Weathering Steel
- Metalloy EM13K-S: Carbon Steel
- Metalloy F2-S: .40 - .80% Nickel, .40 - .65% Molybdenum
- Metalloy N1-S: .75 - 1.10% Nickel
- Metalloy B2-S: 1.00 - 1.50% Chromium, .40 - .65% Molybdenum
- Metalloy 100F3-S: .70 - 1.10% Nickel, .40 - .65% Molybdenum
- Metalloy 120-S: 1.30 - 2.25% Manganese, 2.00 - 2.80% Nickel, .30 - .80% Molybdenum
- Metalloy 92-S: .60 - 1.60% Manganese, 1.25 - 2.00% Nickel, .35% Molybdenum
- Metalloy W-S: Chromium, Copper & Nickel Alloy for Weathering Steel
- Metalloy EM13K-S: Carbon Steel
- Metalloy F2-S: .40 - .80% Nickel, .40 - .65% Molybdenum
- Metalloy N1-S: .75 - 1.10% Nickel
- Metalloy B2-S: 1.00 - 1.50% Chromium, .40 - .65% Molybdenum
- Metalloy 100F3-S: .70 - 1.10% Nickel, .40 - .65% Molybdenum
- Metalloy 120-S: 1.30 - 2.25% Manganese, 2.00 - 2.80% Nickel, .30 - .80% Molybdenum

**Composite Electrodes**

- **FXXX - ECXXX per AWS A5.17**

**Example: F7A8-EC1 per AWS A5.17**

**F7A8-EC1** per AWS A5.17

- **F7A8-ECNi1-Ni1** for weathering steel
- **F8A8-ECM1-M1** for high strength steel
- **F8A8-ECM1-M1** for high strength steel
- **F10A6-ECF3-F3** for high strength steel
- **F10A4-ECF3-F3** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
- **F11A8-ECM3-M3** for high strength steel
- **F11A10-ECM4-M4** for high strength steel
After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

High voltage and low current.pdf

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart Brothers is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.

For Submerged Arc Welding

After 90 years in the business, Hobart Brothers is Welding. And Hobart is Welding.

Training and expertise are key to Hobart Bros.

The company who started that first spark over 90 years ago.
## Metal Cored Wires & Fluxes

### Metal Cored Wire Diameter Offerings

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/64&quot;</td>
<td>2.0mm</td>
<td>3/32&quot;, 1/8&quot;, 5/32&quot;</td>
</tr>
<tr>
<td>3/32&quot;</td>
<td>2.4mm</td>
<td>1/8&quot;, 5/32&quot;</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>3.2mm</td>
<td>5/32&quot;</td>
</tr>
</tbody>
</table>

### Metalloy Wire Offerings

- Metalloy B2-S: AWS: ECB2 SPOOL ARC

### Metalloy 92-S: AWS: ECM1 3/32", 1/8", 5/32"

### Metalloy 112-S: AWS: ECM3 3/32", 1/8", 5/32"

### Metalloy F2-S: AWS: ECF2 5/64", 3/32", 1/8", 5/32"


### Submerged Arc Fluxes

- HN-590 860 OK Flux 429, OK Flux 10.71
- HA-495 761, 780 OK Flux 231, OK Flux 350
- EM13K-S
- Metalloy
  - Metalloy 100F3-S: ECF3 EF3 LA-84
  - Metalloy B2-S: ECB2 LAC-B2 SPOOL ARC
  - Metalloy 120-S: ECM4

### Hobart Distributors

To locate your nearest Hobart distributor call 1-800-532-4000 or 1-977-333-0188 or visit our Web site: www.hobartbrothers.com

**History of Hobart Brothers**

After 80 years in the business, Hobart Brothers in welding and Welding is a Hobart Brothers. 

Hobart has changed in industry since 1930, but it’s still the same company you know and trust with new training and processes.

**Helpful Formulas**

**Electrode/Flux – Cross Reference**

<table>
<thead>
<tr>
<th>Submerged Arc Flux</th>
<th>Submerged Arc Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>HN-590 860 OK Flux 429, OK Flux 10.71</td>
<td>Metalloy 100F3-S: ECF3 EF3 LA-84</td>
</tr>
<tr>
<td>HA-495 761, 780 OK Flux 231, OK Flux 350</td>
<td>Metalloy B2-S: ECB2 LAC-B2 SPOOL ARC</td>
</tr>
<tr>
<td>Metalloy 100F3-S: ECF3 EF3 LA-84</td>
<td>Metalloy 120-S: ECM4</td>
</tr>
</tbody>
</table>