



# CAST PROFILE BAR PRODUCT WELDING PROCEDURE

SHARK™ GROUND ENGAGING TOOLS



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Procedure: PWP0009

Rev: 5

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## 1.0 SCOPE

This document details the recommended procedure and measurement to be followed when setup and welding Sandvik Shark Cast Profile Bar (CPB) product.

For welding requirements please refer to procedure PWP0001.

Applicable parts:

- SCPB50X290
- SCPB50X460
- SCPB50X600
- SCPB50X680
- SCPB50-SLL
- SCPB50-SLR
- SCPB50-SSL
- SCPB50-SSR
- SHSBP50X200-CBL
- SHSBP50X200-CBR
- SHSHA50X200-CBL
- SHSHA50X200-CBR

## 2.0 WELDING SAFETY

Refer to PWP0001 for details.

## 3.0 WELD PROCEDURE SPECIFICATION

Not applicable.

## 4.0 WELDING PROCESS

Refer to PWP0001 for details.

## 5.0 ELECTRICAL PARAMETERS

Refer to PWP0001 for details.

## 6.0 WELDING POSITION

Welding operations shall be performed in the 1G, 1F, 2G, 2F (PA, PB, PC) welding positions. 3GVU (PF) position welded vertical up may be applied where approved by Sandvik representatives. Vertical down progression for any weld pass is strictly prohibited. SMAW / MMAW may weld 3GVU (PF) without approval.

## 7.0 WELDING CONSUMABLES

Refer to PWP0001 for details.

## 8.0 WELDING PREPARATION

Refer to PWP0001 for details.

## 9.0 PREHEAT & INTERPASS TEMPERATURES

Material	Target Pre-heat Temperature °C	Max Inter-pass Temperature °C
50mm CPB Parts	160 - 190	230
Lip plates/ Bucket (ASTM A514 Steels)	As per the manufacturer's recommendation	As per the manufacturer's recommendation

[Table 1 Preheat, Inter pass temperatures.](#)

Refer to Weld Procedure PWP0001 for more details.

## 10.0 PREHEAT APPLICATION

All thermal work such as welding, grinding, gouging and arc welder cutting requires the workpiece to be heated to and maintain the temperatures specified in section 1.0.

Apply preheat – using large diameter heating nozzles – to the workpiece from the opposite side of the workpiece that is being welded.

## 11.0 WELDING SEQUENCE/ PROCEDURE

**Step 1:** Prepare components to be welded as per the layout drawing. If layout drawing is unavailable, follow instructions stipulated in section 8.0

**Step 2:** Scribe/ mark/ or chalk a line parallel to the rear of the lip shrouds ensuring minimum distance is 30mm away from the rear of the shrouds.

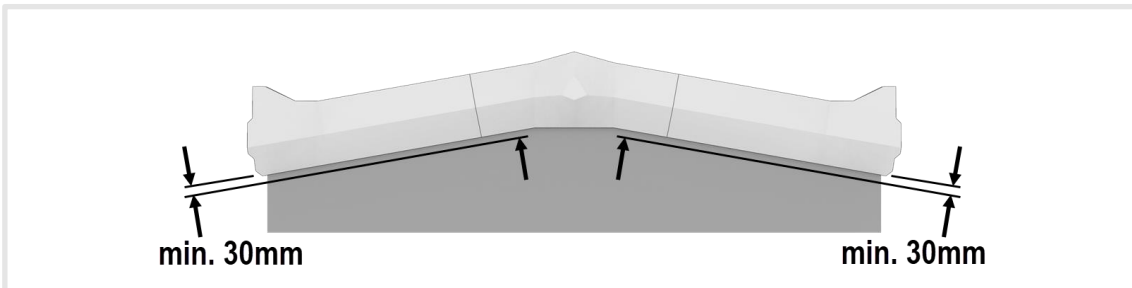


Figure 1: Marking the scribe line (image for reference purposes only).

**Step 3:** Using the center triangle mark on the CPB centerpiece part as a reference point, align the centerpiece part with the center of the center lip shroud and the part's front edges with the scribe line drawn in the previous step. Ensure the minimum distance between the CPB parts and lip shrouds is 30mm unless otherwise not shown in the layout drawing (refer to the image below for details).

**Note:** If the X measurement (see image below) is less than 30mm, adjust the position of the centerpiece part to suit. The minimum distance between the CPB parts and lips shrouds must be at least 30mm.

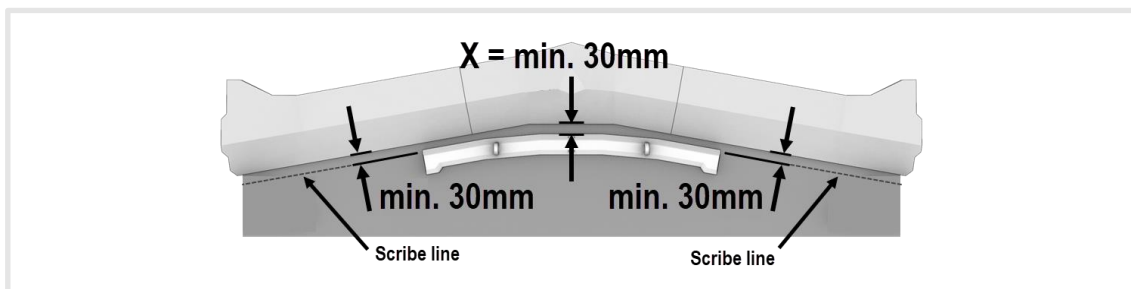


Figure 2: Positioning the CPB centerpiece part (image for reference purposes only).

**Note:** Ensure to preheat the lip and castings to target weld temperature as per instructions in section 1.0 before conducting any weld or cutting operations.

**Step 4:** Tack weld the centerpiece part in the final position.

**Step 5:** Place the left and right CPB heel shrouds in their respective positions on the lip ensuring to align their front leading edges with the scribed line.

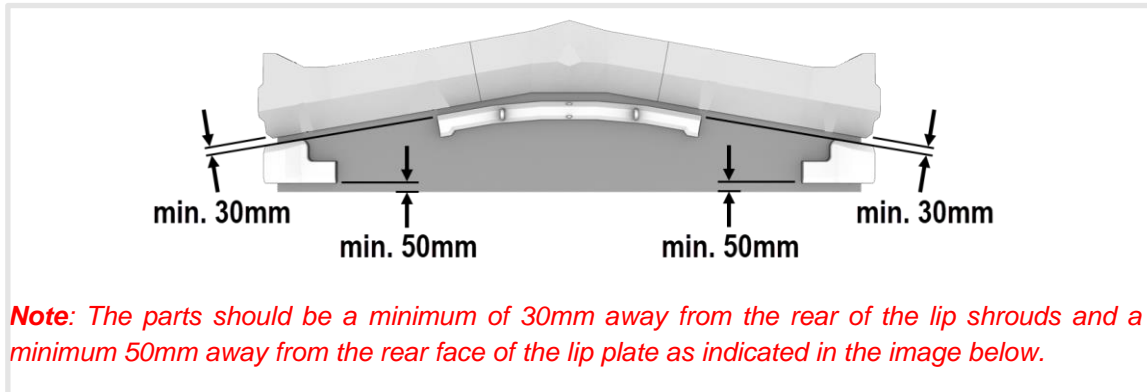


Figure 3: Positioning the CPB heel shroud parts (image for reference purposes only).

**Step 6:** Tack weld the heel shroud parts in place.

**Step 7:** Measure the distances Y1 and Y2 between the CPB heel shroud and centerpiece part and scribe cut lines on CPB side bar parts.

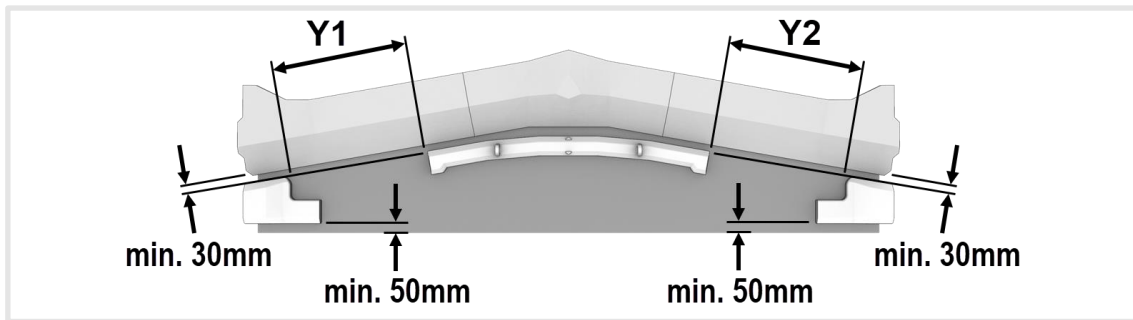


Figure 4: How to size the sidebar segments (image for reference purposes only).

**Step 8:** Following PWP0038, cut/ trim CPB sidebar segments.



Figure 5: Trimming sidebar segments (image for reference purposes only).

**Step 9:** Place the trimmed side bar segments in their correct positions.

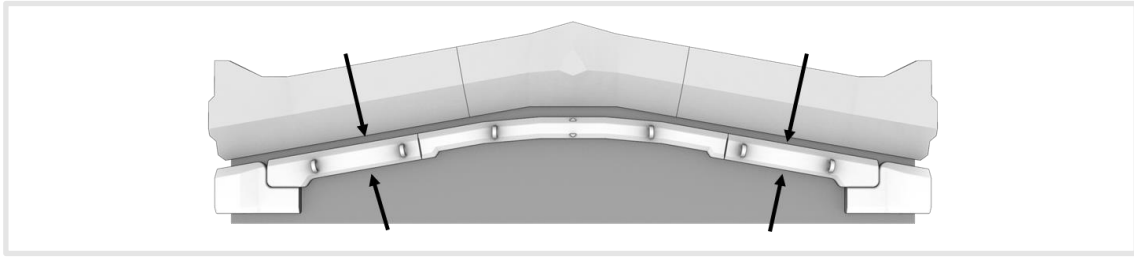


Figure 6: Placing sidebar segments (image for reference purposes only).

**Step 10:** Tack weld side segments in place.

**Step 11:** Progressively lap fillet welds in red highlighted areas (see below) and ensure welds are continuous and connected between all parts. Ensure to clean between runs. Use as many runs as suitable until the correct weld size is achieved (see lip layout drawing).

Ensure welds are completed on top of bars in areas indicated below.

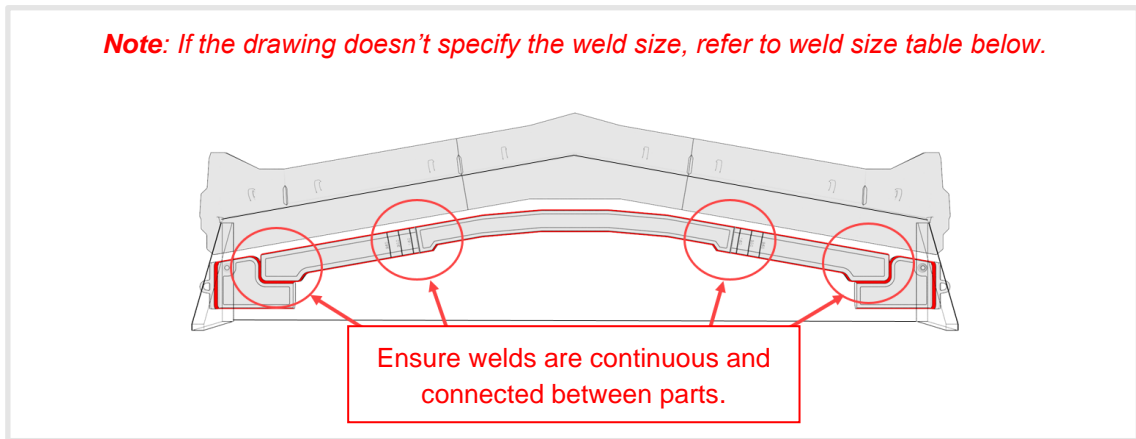


Figure 7: Continuous welds between parts (image for reference purposes only).

**Weld Size:**

Use the following weld size for cast profile bars if it is not shown in the lip layout drawing.

CAST PROFILE BAR PARTS	WELD THROAT SIZE
50mm CPB Parts	12 mm

Table 2 Weld size table.

**Example drawing weld annotation:**

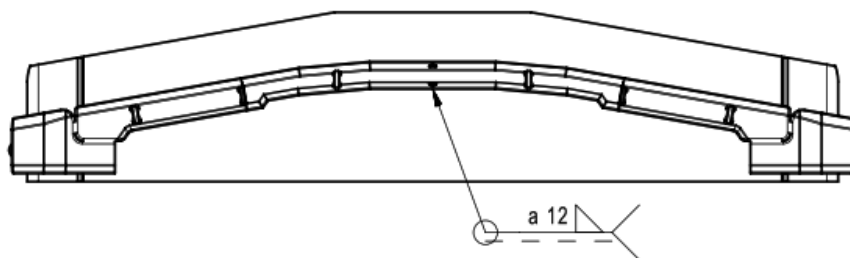


Figure 8: Weld size and annotation (image for reference purposes only).

**Step 12:**

Refer to PWP0001 for post weld cooling instructions.



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## 12.0 REVISION HISTORY

REV	DATE	CHANGES	REVISED BY	APPROVED BY
1	5/10/2011	-	Todd Shaw	
2	29/01/2013	-	Justyna Czekaj	
3	15/03/2013	-		Bradley Dallard
4	20/05/2015	-	-	Bradley Dallard
5	18/08/2023	Updated formatting, added Weld preheat temperature table to section #9. For post weld cooling in step #12, cross reference to PWP0001 added.	Rob Lauchlan	Mehrdad Javadi