NB13-0201

Subject: 2007 Edition, Part 3, Supplement 2, S2.13.10.1 – Weld Buildup of Wastage and Grooving in Stayed Areas

File Number: NB13-0201

Prop. Page: 159 & 160

Proposal: Update text to clarify additional requirements, fix 2 typo's and removes a reference that is incorrect.

Explanation This area currently is confusing and can be updated and corrected to fix these issues. There are four issues to address.

1. Remove "welding shall not cover rivet or stay bolt heads" due to redundancy with c)
2. Add the following text at the end of the requirement statement match the others in S2.13.10.2 & S2.13.10.3. "apply with the following additional requirements identified below."
3. Remove typo ";and"
4. Remove d) completely. Figure has no reference to weld buildup. The figure is for Part 3, supplement 2, S2.13.10.3 and is referenced there.

Update text can be found on page 3

**Item # 2**

"apply with the following additional requirements identified below."

**Item # 1**

**Remove text**

## S2.13.10.1 WELD BUILDUP OF WASTAGE AND GROOVING IN STAYED AREAS

Requirements specified in NBIC Part 3, S2.13.9.1 shall ~~be followed. Welding shall not cover rivet or staybolt heads.~~

a) Prior to welding the rivets and or staybolts in the wasted areas should be removed.

b) Threaded staybolt holes shall be retapped after welding.

c) Welding shall not cover rivet or staybolt heads; ~~and~~

d) ~~See NBIC Part 3, Figure S2.13.10.3-a.~~

**Item # 3**

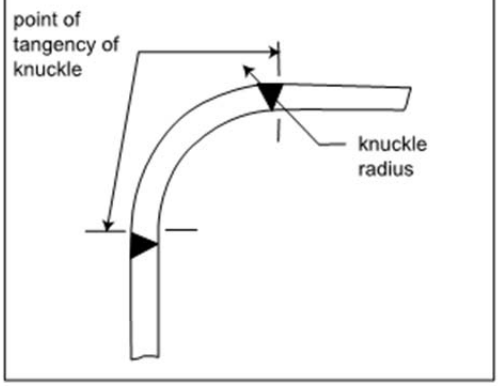
**Remove text**

**Item # 4**

**Remove text**



**FIGURE S2.13.10.3-a**
**Knuckle Point of Tangency**



Updated text and Diagram

**S2.13.10.1 – Weld Buildup of Wastage and Grooving in Stayed Areas**

Requirements specified in NBIC Part 3, S2.13.9.1 shall apply with the following additional requirements identified below.

a) Prior to welding the rivets and or staybolts in the wasted areas should be removed.

b) Threaded staybolt holes shall be retapped after welding.

c) Welding shall not cover rivet or staybolt heads.

NB13-0201

Subject: 2007 Edition, Part 3, Supplement 2, S2.13.10.2 – Weld Repair of Cracks in Stayed Area's

File Number: NB13-0201

Prop. Page: 159

Proposal: Update text to clarify additional requirements, fix 2 typo's and removes a reference that is incorrect.

Explanation This area currently is confusing and can be updated and corrected to fix these issues. There are four issues to address.

1. Remove b) c) and d) due to redundancy with requirements in 2.13.9.2
2. Add a new b) that states "Threaded staybolt holes shall be retapped after welding."

Update text can be found on page 3

**Item # 1**

**Remove text for b) c) & d)**

### S2.13.10.2 WELDED REPAIR OF CRACKS IN STAYED AREAS

Requirements specified in NBIC Part 3, S2.13.9.2 shall apply with the following additional requirements identified below:

a) If the crack extends into a staybolt hole, the staybolt shall be removed prior to making the repair;

~~b) In riveted joints, tack bolts should be placed in alternating holes to hold the plate laps firmly;~~

~~c) Rivets holes should be reamed after welding; and~~

~~d) Welding shall not cover rivet or staybolt heads.~~

**Item #2**
**Add Text**
b) Threaded staybolt holes shall be retapped after welding.

Updated text and Diagram

**S2.13.10.2 – Weld Repair of Cracks in Stayed Area's**

Requirements specified in NBIC Part 3, S2.13.9.1 shall apply with the following additional requirement identified below.

a) If the crack extends into a staybolt hole, the staybolt shall be removed prior to make the repair.

b) Threaded staybolt holes shall be retapped after welding.

NB13-0201

Subject: 2007 Edition, Part 2, Supplement 2, S2.13.10.4 –Repair of Stayed Firebox Sheets Grooved or Wasted at the Mudring

File Number: NB13-0201

Prop. Page: 161

Proposal: Change the wording in providing more guidance for evaluating local pitting corrosion versus general corrosion.

Explanation: Clarify the 60% minimum required thickness and make the description the same in all area's that figure S.2.13.9.1 reference.

1. Change text in b) to include the area exceeding 3 sq. in. (1,950 sq. mm)." Text would state "For mudrings of the locomotive style (See NBIC Part 3, Figure S2.13.10.4), weld buildup shall not be used if the affected section of plate has wasted below 60% of the minimum required thickness per Part 2, Supplement 2 in an area exceeding 3 sq. in. (1,950 sq. mm). (See NBIC Part 3, Figure S2.13.9.1) Repair by weld buildup cannot be used if the wastage extends below the waterside surface of the mudring or if the strength of the structure will be impaired. If extensive welding is required, the affected area shall be removed and replaced with a flush patch."

2. Change text in c) to state "Wasted sections that have wasted below 60% of the minimum required thickness and have an area exceeding 3 sq. in. (1,950 sq. mm) shall be repaired by installing a flush patch using full penetration welds."

Update text can be found on page 3

Item #1
Update Text



## S2.13.10.4 REPAIR OF STAYED FIREBOX SHEETS GROOVED OR WASTED AT THE MUDRING

a) Mudrings of the Ogee style (knuckle) shall be repaired in accordance with NBIC Part 3, S2.13.11.

Item #2
Update Text

b) For Mudrings of the locomotive style (see NBIC Part 3, Figure S2.13.10.4), grooved or wasted firebox sheets having greater than 60% of the minimum required thickness (see NBIC Part 3, Figure S2.13.9.1) remaining may be repaired by weld buildup provided the wastage does not extend below the waterside surface of the mudring and the strength of the structure will not be impaired. If extensive welding is required, the affected area shall be removed and replaced with a flush patch.

c) If the sheet thickness has been reduced to less than 60% of the minimum required thickness, the affected section shall be removed and replaced with a flush patch.

d) If wastage and grooving extends below the mudring waterside surface and if the plate thickness remaining has been reduced to less than the minimum required thickness, the affected section shall be removed and replaced with a flush patch. (See NBIC Part 3, Figure S2.13.10.4).

e) Flush patches shall be arranged to include the mudring rivets and at least the first row of staybolts above the mudring. (See NBIC Part 3, Figure S2.13.10.4-a).

f) For mudrings of the locomotive style, pitted and wasted sections of mudrings may be built up by welding provided the strength of the mudring will not be impaired. Where extensive weld buildup is employed, the Inspector may require an appropriate method of NDE for the repair.

g) Cracked or broken mudrings may be repaired by welding or installing flush patches using full penetration welds. Patches shall be made from material that is at least equal in strength and thickness to the original material. Patches shall fit flush on waterside surfaces. Where necessary, firebox sheets on both sides of the defect may be removed to provide access for inspection and welding.

**FIGURE S2.13.10.4**
**Mudring Wastage Repair**

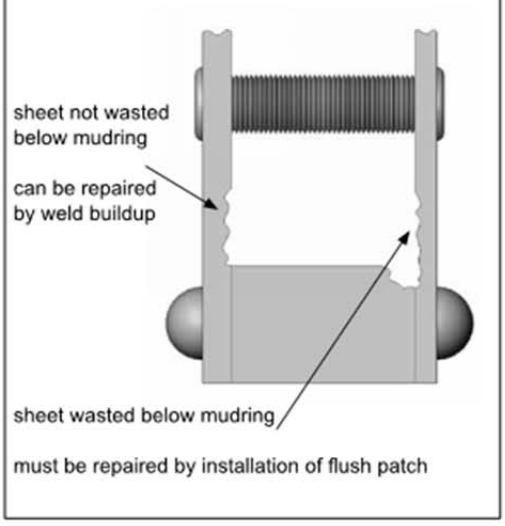
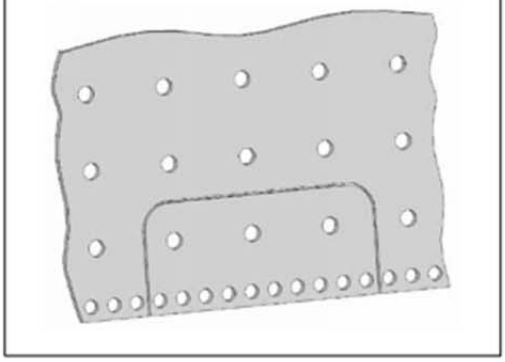



**FIGURE S2.13.10.4-a**
**Mudring Flush Patch**



**S2.13.10.4 REPAIR OF STAYED FIREBOX SHEETS GROOVED OR WASTED AT THE MUDRING**

b) For mudrings of the locomotive style (See NBIC Part 3, Figure S2.13.10.4), weld buildup shall not be used if the affected section of plate has wasted below 60% of the minimum required thickness per Part 2, Supplement 2 in an area exceeding 3 sq. in. (1,950 sq. mm). (See NBIC Part 3, Figure S2.13.9.1) Repair by weld buildup cannot be used if the wastage extends below the waterside surface of the mudring or if the strength of the structure will be impaired. If extensive welding is required, the affected area shall be removed and replaced with a flush patch."

c) Wasted sections that have wasted below 60% of the minimum required thickness and have an area exceeding 3 sq. in. (1,950 sq. mm) shall be repaired by installing a flush patch using full penetration welds.

NB13-0201

Subject: 2007 Edition, Part 3, Supplement 2, S2.13.14.2 – Repair of Handhole Openings

File Number: NB13-0201

Prop. Page: 170 & 171

Proposal: Change the wording in providing more guidance for evaluating local pitting corrosion versus general corrosion.

Explanation: Clarify the 60% minimum required thickness and make the description the same in all area's that figure S.2.13.9.1 reference.

1. Add "in an area exceeding 3 sq. in. (1,950 sq. mm)." to a)
2. Move Text "Weld buildup of wasted areas shall not exceed 100 sq. in. (65,000 sq. mm)." to item d) to match other area's of the NBIC repair section.
3. Add "and have an area exceeding 3 sq. in. (1,950 sq. mm)" to c)

Update text and diagram can be found on page 3

Item #1
Add the text below:

in an area exceeding 3 sq. in. (1,950 sq. mm).

**S2.13.14.2 REPAIR OF HANDHOLE OPENINGS**

a) Weld buildup shall not be used if the affected section of plate has wasted below 60% of the original thickness per NBIC Part 3, Supplement 2. (See NBIC Part 3, Figure S2.13.9.1.) Weld buildup of wasted areas shall not exceed 100 sq. in. (65,000 sq. mm).

Item #2
Move circle text to new item d)

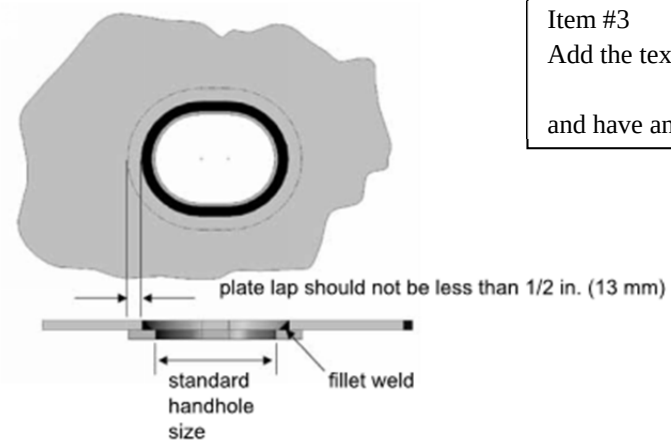




b) Weld buildup is to replace material that has been lost due to wastage and grooving, and is not to replace thickness on the opposite side of the sheet. Weld buildup must be applied to the side of the sheet that is wasted or grooved.

c) Wasted sections that have wasted below 60% of the minimum required thickness shall be repaired by installing a flush patch using full penetration welds or by the installation of a ring on the inside (pressure side) of the sheet. (See NBIC Part 3, Figure S2.13.14.2).

**FIGURE S2.13.14.2**
**Repair of Handhole Opening**




Item #3
Add the text below:

and have an area exceeding 3 sq. in. (1,950 sq. mm).

**S2.13.14.2 Repair of Handhole Openings**

a) Weld buildup shall not be used if the affected section of plate has wasted below 60% of the minimum required thickness per Part 2, Supplement 2 in an area exceeding 3 sq. in. (1,950 sq. mm). (See NBIC Part 3, Figure S2.13.9.1)

b) Weld buildup is to replace material that has been lost due to wastage and grooving, and is not to replace thickness on the opposite side of the sheet. Weld buildup must be applied to the side of eth sheet that is wasted or grooved.

c) Wasted sections that have wasted below 60% of the minimum required thickness and have an area exceeding 3 sq. in. (1,950 sq. mm), shall be repaired by installing a flush patch using full penetration welds.

d) Weld buildup of wasted areas shall not exceed 100 sq. in. (65,000 sq. mm).