

**Ballot ID:**

**Title:** Modification of Table 4.16 to Include Additional Linings

**Purpose:** To add Material Cost Factors to Table 4.16 of Part 3 to include all the lining types discussed in Part 2, Section 5.0.

**Impact:** Will allow the material cost factor adjustment calculation to be used for more materials/linings. Material cost factor is included in the financial cost calculation to repair or replace a damaged component.

**Rationale:** Part 2, Section 5.0 details Damage Factor calculations for several lining materials. In the current edition, however, nearly all of the lining materials (except glass-lining) are missing from Table 4.16, so it is not possible to calculate the financial consequence to replace or repair a component with these linings. In other words, it is essentially an inconsistency between the list of linings for damage factor calculations and the list for material cost factors when calculating component damage cost.

**Technical Reference(s):**

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### Tracking Status

Submitted to Task Group		Submitted to SCI		Submitted to Master Editor	
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### Proposed Changes and/or Wording

See changes in red text below.

Table 4.16 – Material Cost Factors

Material	Cost Factor, <i>matcost</i>	Material	Cost Factor, <i>matcost</i>
Carbon Steel	1.0	Clad Alloy 400	6.4
<u>Organic Coatings (&lt; 80 mil)</u>	<u>1.2</u>	90/10 Cu/Ni	6.8
1.25Cr-0.5Mo	1.3	Clad Alloy 600	7.0
2.25Cr-1Mo	1.7	CS “Teflon” Lined	7.8
5Cr-0.5Mo	1.7	Clad Nickel	8.0
7Cr-0.5Mo	2.0	Alloy 800	8.4
Clad 304 SS	2.1	70/30 Cu/Ni	8.5
<u>Fiberglass</u>	<u>2.5</u>	904L	8.8
Polypropylene Lined (pp)	2.5	Alloy 20	11
9Cr-1Mo	2.6	Alloy 400	15
405 SS	2.8	Alloy 600	15
410 SS	2.8	Nickel	18
304 SS	3.2	<u>Acid Brick</u>	<u>20</u>
Clad 316 SS	3.3	<u>Refractory</u>	<u>20</u>
<u>Strip Lined Alloy</u>	<u>3.3</u>	Alloy 625	26
<u>Organic Coating (&gt;80 mil)</u>	<u>3.4</u>	Titanium	28
CS “Saran” Lined	3.4	Alloy “C”	29
CS Rubber Lined	4.4	Zirconium	34
316 SS	4.8	Alloy “B”	36
CS Glass Lined	5.8	Tantalum	535

Component Damage Cost Equation (Eq. 3.86) that uses cost factor, *matcost*.

$$FC_{cmd} = \left( \frac{\sum_{n=1}^4 gff_n \cdot holecost_n}{gff_{total}} \right) \cdot matcost$$