

222 Cavalcade Street, 77009-3213  
P.O. Box 8768, Houston, Texas 77249-8768  
Tel: (713) 692-9151 Fax: (713) 696-6209

Attention: Sam Reese  
**Sunshine Enterprise, Inc.**  
2005 Fletcher Creek Dr.  
Memphis, TN 38133  
P: (901) 452-0188 / F: 901/452-8688

W/O. No.: SUN088-10-07-95830-2  
P.O. No.:  
Report Date: 10/11/2005

**Identification:** CLAMP - S  
**Description:** Swivel Coupler

**CHEMICAL ANALYSIS**

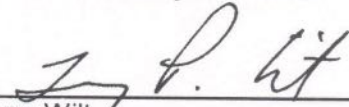
Element		Result %	Q255, Grade A		AISI 1020	
			Min %	Max %	Min %	Max %
C	=	0.18	0.14	0.22	0.18	0.23
Mn	=	0.38	0.30	0.65	0.30	0.60
P	=	0.011	0.000	0.045	0.000	0.040
S	=	0.022	0.000	0.050	0.000	0.050

The material from Clamp – S meets Chinese steel Q255, Grade A.  
It also meets comparable US steel, AISI 1020.

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Stork SWL, is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group

**Respectfully Submitted**

  
Terry Wilt  
Manager, Product Evaluation

222 Cavalcade Street 77009-3213  
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Tel: (713) 692-9151 Fax: (713) 696-6205

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**Identification:** Clamp – S: Swivel Couplers  
**Test Method:** EN74  
**Quantity:** 2

Hexagonal head of clamp bolts are tightened to 38 ft. lbs. prior to loading for all tests.

**SLIP LOAD**

Coupler #	Slip Load (measured after 0.275" travel)
1	10,514 lbs.
2	8,345 lbs.
Average	9,430 lbs.

With 4:1 safety factor, the average slip load value is 2,357 lbs.

**ULTIMATE LOAD**

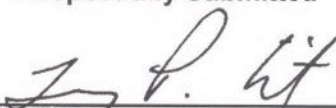
Coupler #	Ultimate Load	Failure Mode
1	16,000 lbs.	Center swivel and deformation of 1 pivot pin
2	9,779 lbs.	Forging around pivot pin
Average	12,890 lbs.	---

With 4:1 safety factor, the average ultimate load value is 3,223 lbs.

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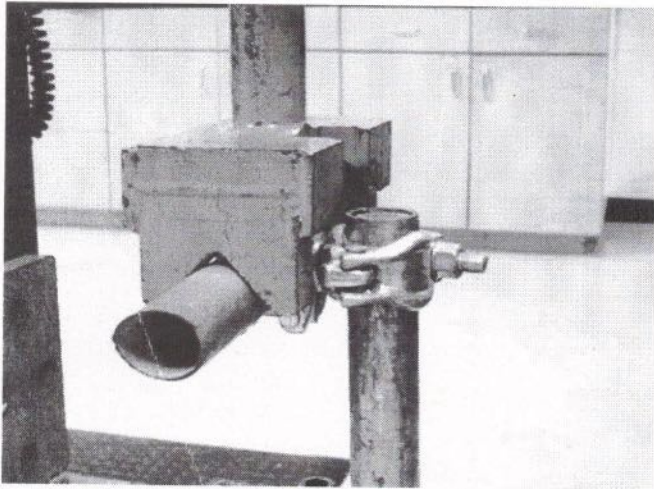
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Terry Wilt  
Manager, Product Evaluation

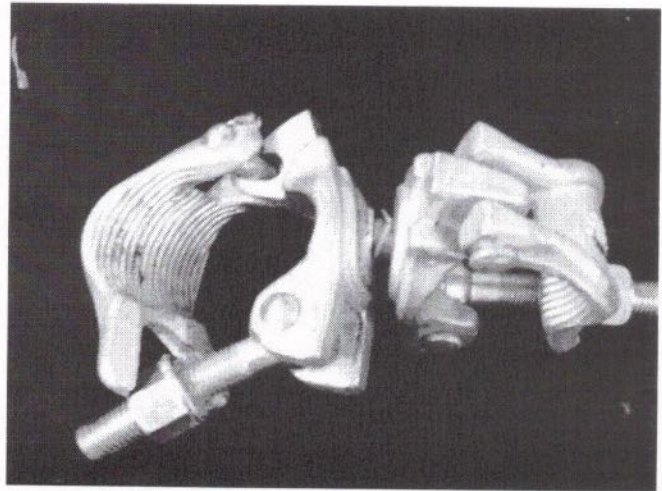
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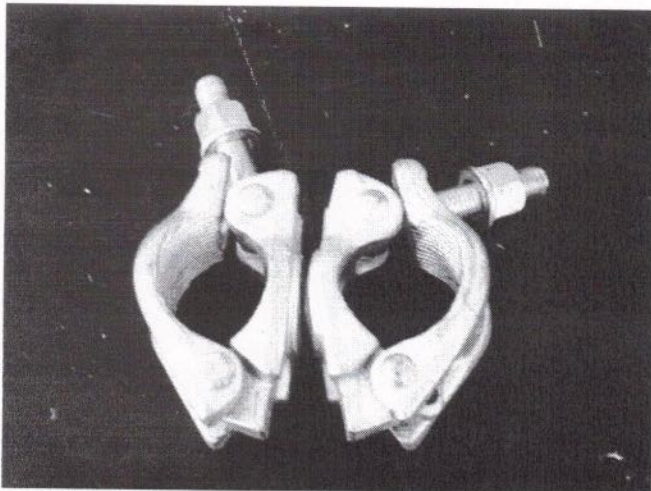
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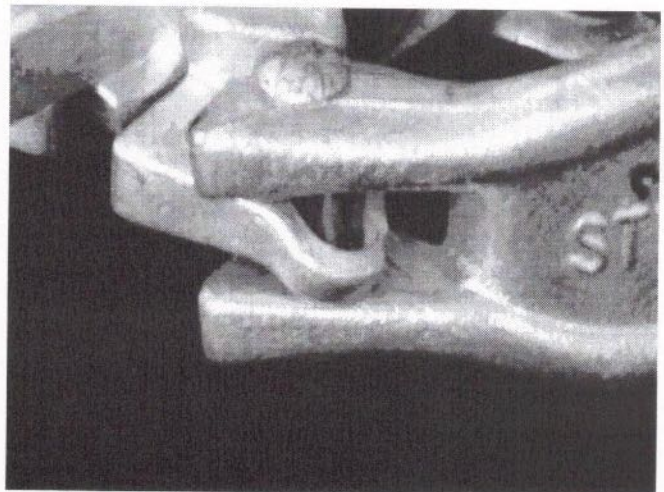
Swivel coupler test configuration



Swivel #1. Ultimate failure at 16,000 lbs.



Swivel #2. Ultimate failure at 9,779 lbs.

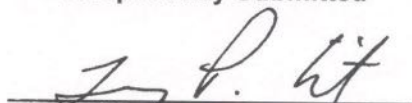


Swivel #2, failure of forging around pivot pin

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