

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:0301-CR-ST-FQ-T2-S2-No.3  
Mtl Group:Stainless Steel Material: 0301

Mtl Spec Code:22

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Forming Quality

**Temper:** Half Hard

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 666

**Addnl. Spec:** SAE J405

**Exception:**

**Grain Size:**

**Note:** Thickness +/- .001 Width +/- .005.

**Hardness:** This material is specified by yield strength (110,000 lbs/ins).

**Fitness Note:** Fitness For Use: This material must be fit for forming. The end product will be utilized in an occupant restraint system as a spring.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			1.000
<b>Manganese . . :</b>			2.000	<b>Nickel . . .</b>		6.000	8.000
<b>Phosphorus .</b>			0.045	<b>Chromium . .</b>		16.000	18.000
<b>Sulphur . . .</b>			0.030	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:050 XF-1P-ST-SQ-TT-AR-No.3  
Mtl Group:High Strength Steel      Material: 050 XF

Mtl Spec Code: 18

**Final Processing:** Hot rolled followed by one pass cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Not Specified

**Surface :** As Rolled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A1008/A 1008M 04b HSLAS-F

**Addnl. Spec:**

**Exception:** Substitution of 050 XF Material- Per SAE J1392 is acceptable.

**Grain Size:**

**Note:**

**Hardness:**

This material is specified by yield strength.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.060
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

Description: 050 XF-HR-ST-SQ-TT-PO-No.3

Mtl Group: High Strength Steel

Material: 050 XF

Mtl Spec Code:1

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Not Specified

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM 1008/A 1008M 04b

**Addnl. Spec:**

**Exception:** Substitution of 050 XLF Material- Per SAE J1392 is acceptable.

**Grain Size:**

**Note:**

**Hardness:**

This material is specified by yield strength.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.060
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description: 060 XF-1P-ST-SQ-TT-AR-No.3  
Mtl Group: High Strength Steel      Material: 060 XF

Mtl Spec Code: 2

**Final Processing:** Hot rolled followed by one pass cold rolled.      **Mtl Form:** Strip  
**Quality:** Special Quality      **Temper:** Not Specified      **Surface :** As Rolled  
**Edge Condition:** Approx. square edge by slitting, not filing.  
**Gen Spec:** ASTM A 1008/A 1008M 04b HSLA-F      **Addnl. Spec:**  
**Exception:** Substitution of 060 XLF Material- Per SAE J1392 is acceptable.

**Grain Size:**      **Note:**

**Hardness:**  
This material is specified by yield strength.

Fitness  
**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.060
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:060 XF-HC-ST-SQ-TT-PO-No.3  
Mtl Group:High Strength Steel      Material:060 XF

Mtl Spec Code:34

**Final Processing:** Hot or Cold Rolled      **Mtl Form:** Strip  
**Quality:** Special Quality      **Temper:** Not Specified      **Surface :** Pickled & Oiled  
**Edge Condition:** Approx. square edge by slitting, not filing.  
**Gen Spec:** ASTM A1011/A 1011M HSLA-F      **Addnl. Spec:** ASTM A1008/A 1008M  
**Exception:** Substitution of 080 XLF Material- Per SAE J1392 is acceptable.

**Grain Size:**      **Note:**

**Hardness:**  
This material is specified by yield strength.

Fitness  
**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.060
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:060 XF-HR-ST-SQ-TT-PO-No.3  
Mtl Group:High Strength Steel      Material: 060 XF

Mtl Spec Code:3

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Not Specified

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A1011/A 1011M 04a HSLA-F

**Addnl. Spec:**

**Exception:** Substitution of 080 XLF Material- Per SAE J1392 is acceptable.

**Grain Size:**

**Note:**

**Hardness:**

This material is specified by yield strength.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.060
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:080 XF-HR-ST-SQ-TT-PO-No.3  
Mtl Group:High Strength Steel      Material: 080 XF

Mtl Spec Code: 35

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Not Specified

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A1011/A 1011M 04a HSLAS-F      **Addnl. Spec:**

**Exception:** Substitution of 080 XLF Material- Per SAE J1392 is acceptable.

**Grain Size:**

**Note:**

**Hardness:**

This material is specified by yield strength.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.150	<b>Silicon . . .</b>			
<b>Manganese . . :</b>			1.650	<b>Nickel . . .</b>			0.200
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			0.150
<b>Sulphur . . .</b>			0.025	<b>Molybdenum :</b>			0.160
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1008-CR-SH-CQ-AR-AR-N/A  
Mtl Group:Low Carbon Steel                      Material: 1008

Mtl Spec Code:33

**Final Processing:** Cold rolled.

**Mtl Form:** Sheet

**Quality:** Commercial Quality    **Temper:** As Rolled

**Surface :** As Rolled

**Edge Condition:** Not Applicable

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.100	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.250	0.500	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

Description: 1008-CR-ST-CQ-T2-PO-No.3  
 Mtl Group:Low Carbon Steel                      Material:1008

Mtl Spec Code:44

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality    **Temper:** Half Hard

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.100	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.250	0.500	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1008-CR-ST-CQ-T4-S1-No.3  
Mtl Group:Low Carbon Steel                      Material:1008

Mtl Spec Code: 37

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality

**Temper:** Skin Rolled

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

B65 Max

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>			0.100	<b>Silicon . . .</b>			
<b>Manganese . . :</b>			0.500	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.



**Material Specifications for Steel**

Revision Date: June 9, 2010

Description: 1010-1P-ST-CQ-T3-S1-No.3  
Mtl Group: Low Carbon Steel                      Material: 1010

Mtl Spec Code: 21

**Final Processing:** Hot rolled followed by one pass cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality    **Temper:** Quarter Hard

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A109

**Addnl. Spec:** Composition per ASTM A568/A568M.

**Exception:** No Exception.

**Grain Size:**

**Note:**

**Hardness:**

60-75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes  
The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1010-CR-SH-CQ-AR-AR-N/A  
Mtl Group:Low Carbon Steel                      Material:1010

Mtl Spec Code:32

**Final Processing:** Cold rolled.

**Mtl Form:** Sheet

**Quality:** Commercial Quality    **Temper:** As Rolled

**Surface :** As Rolled

**Edge Condition:** Not Applicable

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1010-CR-ST-CQ-T2-PO-No.3  
Mtl Group:Low Carbon Steel Material:1010

Mtl Spec Code:45

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality **Temper:** Half Hard

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 569/A 569M

**Addnl. Spec:** Composition per ASTM A682

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1010-CR-ST-CQ-T3-S1-No.3  
Mtl Group:Low Carbon Steel Material:1010

Mtl Spec Code:4

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality **Temper:** Quarter Hard

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1010-CR-ST-CQ-T4-S1-No.3  
Mtl Group:Low Carbon Steel Material:1010

Mtl Spec Code:5

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality **Temper:** Skin Rolled

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

HRB 65 Max

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:1010-CR-ST-CQ-T4-S2-No.3  
Mtl Group:Low Carbon Steel Material:1010

Mtl Spec Code:19

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality **Temper:** Skin Rolled

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

Fitness

**Fitness Note:**

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:1010-HR-ST-CQ-T3-S1-No.3  
Mtl Group:Low Carbon Steel                      Material:1010

Mtl Spec Code:6

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality    **Temper:** Quarter Hard

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 569/A 569M

**Addnl. Spec:** Composition per ASTM A682

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

60 - 75 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.080	0.130	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1018-HR-SH-CQ-T3-S1-No.3  
Mtl Group:Low Carbon Steel Material:1018

Mtl Spec Code: 38

**Final Processing:** Hot rolled. **Mtl Form:** Sheet

**Quality:** Commercial Quality **Temper:** Quarter Hard **Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109 **Addnl. Spec:** Coposition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:** **Note:**

**Hardness:**  
70 - 85 HRB

Fitness  
**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.140	0.200	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

Description:1020-CR-ST-CQ-T2-PO-No.3

Mtl Group:Low Carbon Steel

Material:1020

Mtl Spec Code:46

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality    **Temper:** Half Hard

**Surface :** Pickled & Oiled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

70 - 85 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.170	0.230	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1020-CR-ST-CQ-T2-S1-No.3  
Mtl Group:Low Carbon Steel Material:1020

Mtl Spec Code:7

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality **Temper:** Half Hard

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109

**Addnl. Spec:** Composition per X1.1 ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:**

**Note:**

**Hardness:**

70 - 85 HRB

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.170	0.230	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1020-HR-SH-CQ-T3-S1-No.3  
Mtl Group:Low Carbon Steel Material:1020

Mtl Spec Code:39

**Final Processing:** Hot rolled. **Mtl Form:** Sheet

**Quality:** Commercial Quality **Temper:** Quarter Hard **Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 109 **Addnl. Spec:** Composition per ASTM A568/A568M

**Exception:** No Exceptions

**Grain Size:** **Note:**

**Hardness:**  
70 - 85 HRB

Fitness  
**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.170	0.230	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.300	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.030	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1040-CR-ST-CQ-SA-S1-No.3  
Mtl Group:Medium Carbon Steel      Material:1040

Mtl Spec Code:8

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality      **Temper:** Spheroidize Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:**

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:**

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.370	0.440	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1040-HR-ST-CQ-IN-S1-No.3  
Mtl Group:Medium Carbon Steel      Material:1040

Mtl Spec Code:9

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Commercial Quality      **Temper:** Intermediate Hardness

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 569/A 569M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:**

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** HRB 90 Max.

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.370	0.440	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:**

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**  
Revision Date: June 9, 2010

Description:1050-1P-ST-SQ-SA-S1-No.1  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:27

**Final Processing:** Hot rolled followed by one pass cold rolled.                      **Mtl Form:** Strip

**Quality:** Special Quality                      **Temper:** Spheroidize Annealed                      **Surface :** Dull

**Edge Condition:** Round edge.

**Gen Spec:** ASTM A 749/749M                      **Addnl. Spec:**

**Exception:** Substitution of cold rolled material per IMMI Spec 1050 CR ST-SQ-SA-S1 is acceptable.

**Grain Size:** 6-9 Grain Size                      **Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-1P-ST-SQ-SA-S1-No.3  
Mtl Group:High Carbon Steel Material:1050

Mtl Spec Code:10

**Final Processing:** Hot rolled followed by one pass cold rolled. **Mtl Form:** Strip

**Quality:** Special Quality **Temper:** Spheroidize Annealed **Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 749/749M **Addnl. Spec:**

**Exception:** Substitution of cold rolled material per IMMI Spec 1050 CR ST-SQ-SA-S1 is acceptable.

**Grain Size:** 6-9 Grain Size **Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-1P-ST-SQ-SA-S1-No.4  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:29

**Final Processing:** Hot rolled followed by one pass cold rolled.                      **Mtl Form:** Strip

**Quality:** Special Quality                      **Temper:** Spheroidize Annealed                      **Surface :** Dull

**Edge Condition:** Round edge produced by edge rolling.

**Gen Spec:** ASTM A 749/749M                      **Addnl. Spec:**

**Exception:** Substitution of cold rolled material per IMMI Spec 1050 CR ST-SQ-SA-S1 is acceptable.

**Grain Size:** 6-9 Grain Size                      **Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-CR-ST-SQ-SA-AR-No.3  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:20

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** As Rolled

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:** 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-CR-ST-SQ-SA-S1-No.3  
Mtl Group:High Carbon Steel Material:1050

Mtl Spec Code: 11

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:** 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-CR-ST-SQ-SA-S2-No.3  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:12

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:** 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-CRG-ST-SQ-SA-S1-No.3  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:30

**Final Processing:** CRS Followed by Additional Pass or Passes for Gage Control                      **Mtl Form:**                      Strip

**Quality:** Special Quality                      **Temper:** Spheroidize Annealed                      **Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M                      **Addnl. Spec:** Composition per ASTM A682

**Exception:** Substitution of aluminum killed material is acceptable.

**Grain Size:** 6-9 Grain Size                      **Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.



**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050-HR-ST-SQ-SA-S1-No.3  
Mtl Group:High Carbon Steel                      Material:1050

Mtl Spec Code:36

**Final Processing:** Hot rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:**

**Grain Size:** 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** Per ASTM A684/684M, Figure 2.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.480	0.550	<b>Silicon . . .</b>			
<b>Manganese . . :</b>		0.600	0.900	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.050	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1050M-CR-ST-SQ-SA-S2-No.3  
Mtl Group:High Carbon Steel                      Material:1050M

Mtl Spec Code:17

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:**

**Exception:** Inclusion content (sulphides, alumina, silicates, and oxides) to be no greater than rating #2 (light) per ASTM E45.

**Grain Size:** 5 Grain Size Max.

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** HRB 76 Max.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.470	0.550	<b>Silicon . . .</b>			0.020
<b>Manganese . . :</b>		0.450	0.750	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.020	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.020	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1095-CR-ST-SQ-SA-S1-No.3  
Mtl Group:High Carbon Steel Material:1095

Mtl Spec Code:13

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Spheroidize Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 684/684M

**Addnl. Spec:** Composition per ASTM A682

**Exception:** No Exceptions

**Grain Size:**

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** HRB 90 Max.

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.900	1.040	<b>Silicon . . .</b>		0.150	0.300
<b>Manganese . . :</b>		0.300	0.500	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>			
<b>Sulphur . . .</b>			0.040	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:1141-CR-BR-SQ-A-AR-N/A  
Mtl Group:Medium Carbon Steel      Material:1141

Mtl Spec Code:14

**Final Processing:** Cold rolled.

**Mtl Form:** Bar

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** As Rolled

**Edge Condition:** Not Applicable

**Gen Spec:** ASTM A 29 /A 29M

**Addnl. Spec:**

**Exception:** No Exceptions

**Grain Size:** Si Killed, 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 85 HRB MAX

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.370	0.450	<b>Silicon . . .</b>			0.200
<b>Manganese . . :</b>		1.350	1.650	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.040	<b>Chromium . .</b>			
<b>Sulphur . . .</b>		0.080	0.130	<b>Molybdenum :</b>			
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.



**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130-CR-BR-SQ-AN-AR-N/A		
Mtl Group:Alloy Steel	Material:	4130

Mtl Spec Code:47

**Final Processing:** Cold rolled.

**Mtl Form:** Bar

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** As Rolled

**Edge Condition:** Not Applicable

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM 506

**Exception:** No Exceptriions

**Grain Size:** 6 -9 Grain Size

**Note:** Grain size of the material should be predominately equiaxed with the range specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 85 HRB Max

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** Minimum 90% spheroidal carbide structure with no evidence of lamellar or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130-CR-ST-SQ-AN-S1-No.3  
Mtl Group:Alloy Steel Material:4130

Mtl Spec Code:41

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM 506

**Exception:** No Exceprions

**Grain Size:** 6 -9 Grain Size

**Note:** Grain size of the material should be predominately equiaxed with the range specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 85 HRB Max

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** Minimum 90% spheroidal carbide structure with no evidence of lamellar or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130-CR-ST-SQ-AN-S2-No.3  
Mtl Group:Alloy Steel Material:4130

Mtl Spec Code:43

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM 506

**Exception:** No Exceptrions

**Grain Size:** 6 -9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determine d in accordance with ASTM E112.

**Hardness:** 85 HRB Max

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and p lating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** Minimum 90% spheroidal carbide structure with no evidence of lamellar or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130-CR-ST-SQ-DSA-S1-No.3  
Mtl Group:Alloy Steel Material:4130

Mtl Spec Code:28

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Double Spheroidized

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM A506

**Exception:** No Exceptions.

**Grain Size:** Si Killed, 6-9 Grain Size

**Note:** NOTE: Grain size of the material should be predominately equiaxed with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 80 HRB MAX

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 95% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130S-CR-ST-SQ-AN-S1-No.3  
Mtl Group:ALLOY STEEL Material:4130S

Mtl Spec Code:15

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** Dull

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM A506

**Exception:** No Exceptions

**Grain Size:** Si Killed, 6-9 Grain **Note:** NOTE: Grain size of the material should be predominately equiaxed Size with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 85 HRB MAX

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

**Material Specifications for Steel**

Revision Date: June 9, 2010

Description:4130S-CR-ST-SQ-AN-S2-No.3  
Mtl Group:ALLOY STEEL Material:4130S

Mtl Spec Code:26

**Final Processing:** Cold rolled.

**Mtl Form:** Strip

**Quality:** Special Quality

**Temper:** Annealed

**Surface :** Bright

**Edge Condition:** Approx. square edge by slitting, not filing.

**Gen Spec:** ASTM A 505

**Addnl. Spec:** ASTM A506

**Exception:** No Exceptions

**Grain Size:** Si Killed, 6-9 Grain **Note:** NOTE: Grain size of the material should be predominately equiaxed Size with the range as specified above. Grain size shall be determined in accordance with ASTM E112.

**Hardness:** 85 HRB MAX

Fitness

**Fitness Note:** Fitness For Use: This material must be fit for blanking, forming, heat treating, and plating processes. The end product will be utilized in an occupant restraint system.

	Std	Min	Max		Std	Min	Max
<b>Carbon . . .</b>		0.280	0.330	<b>Silicon . . .</b>		0.150	0.350
<b>Manganese . . :</b>		0.400	0.600	<b>Nickel . . .</b>			
<b>Phosphorus .</b>			0.035	<b>Chromium . .</b>		0.800	1.100
<b>Sulphur . . .</b>			0.035	<b>Molybdenum :</b>		0.150	0.250
<b>Aluminum . .</b>				<b>Boron . . . .</b>			

**Microstructure:** NOTE: Minimum 90% spheroidal carbide structure with no evidence of lamellar pearlite or disintegrating plates.

Material shall be free of pits, laminations and any other surface imperfections, consistent with industry standards for the quality specified, which may be detrimental in the manufacture of the product for which the material is intended. Continuous cast material is preferred.

Steel mill heat number, chemistry and master coil number used to manufacture the component lot number of each shipment must be certified per IMMI Procedure QA-33.

