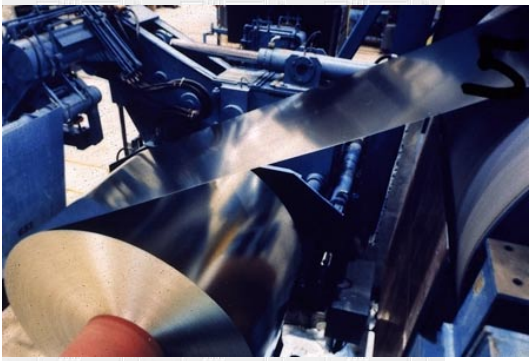
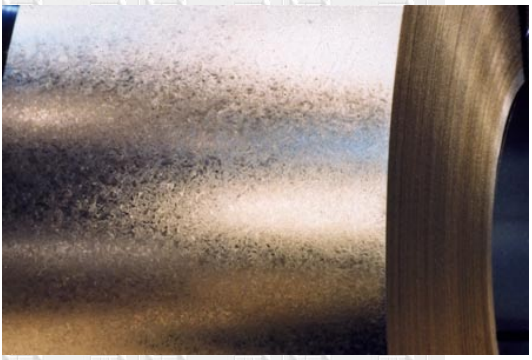
American Iron & Steel Institute
XML Work Group

isXML: Test Report

An Industry Document Guideline for Metal Transactions





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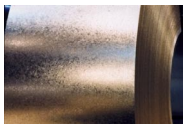

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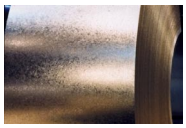

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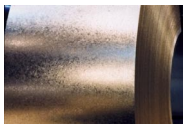


Background

This document is intended to describe the 'payload' section of an XML-formatted 'Test Report' message. Message routing structures are not currently a part of these guidelines.

The **structure** of the AISI XML message is as follows:

isXML DTD
1. Interchange level (described in 'Draft V0001 – Control.doc)
2. Transaction level
   - 2.1. Control (described in 'Draft V0001 – Control.doc)
   - 2.2. Data Area
     - 2.2.1. Header
     - 2.2.2. Detail

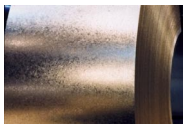
As part of the methodology used to develop these guidelines, the work group mapped transaction data requirements, grouped like elements together as 'classes' or common components, and structured the document.

The section labeled '**Class Relationships'** diagrams the document structure in terms of the identified classes or components. The section labeled '**Document Structure'** further outlines the hierarchical structure of the message.

The '**isXML DTD'** portion of the guideline contains the message DTD. The common class definitions have been 'included' in the DTD and are described in 'Draft V0001 – Overview.doc'.

A number of sections in the guideline have been reserved for 'examples'. The 'source document' is a representation of a paper document used to derive the example. The 'machine version' example is a fully extended version of the XML which would be used where sophisticated systems are communicating and have access to industry and society codes and table structures. Finally, the 'text version' example is used for a lower-tech implementation where codes and tables need not be referenced.

A tag dictionary is included in 'Draft V0001 – Overview.doc.



Transaction Description and Usage

This guideline is intended to provide the format and content necessary to communicate test report data. The purpose of this set is to transmit the results of tests. This includes physical testing, chemical properties, and statistical data.

Class Relationships

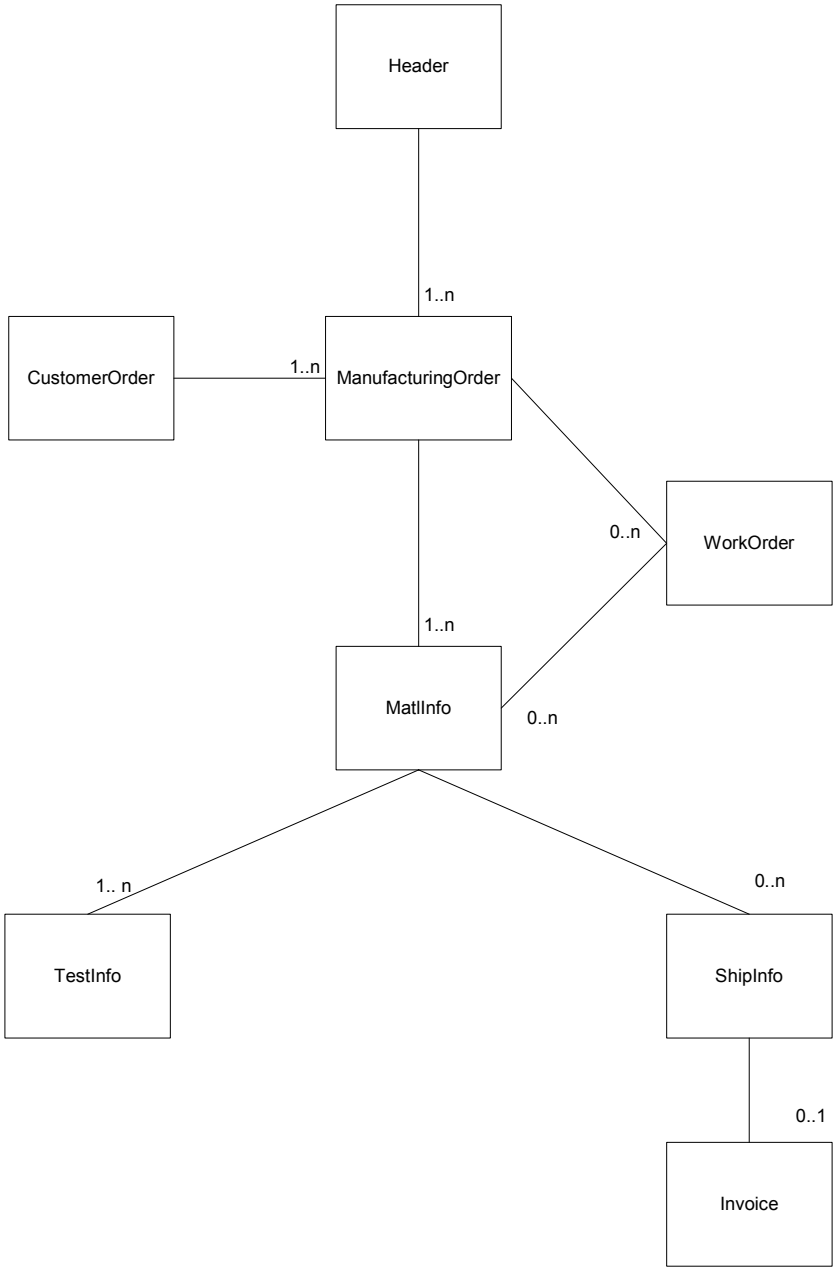


Figure 1

Document Structure

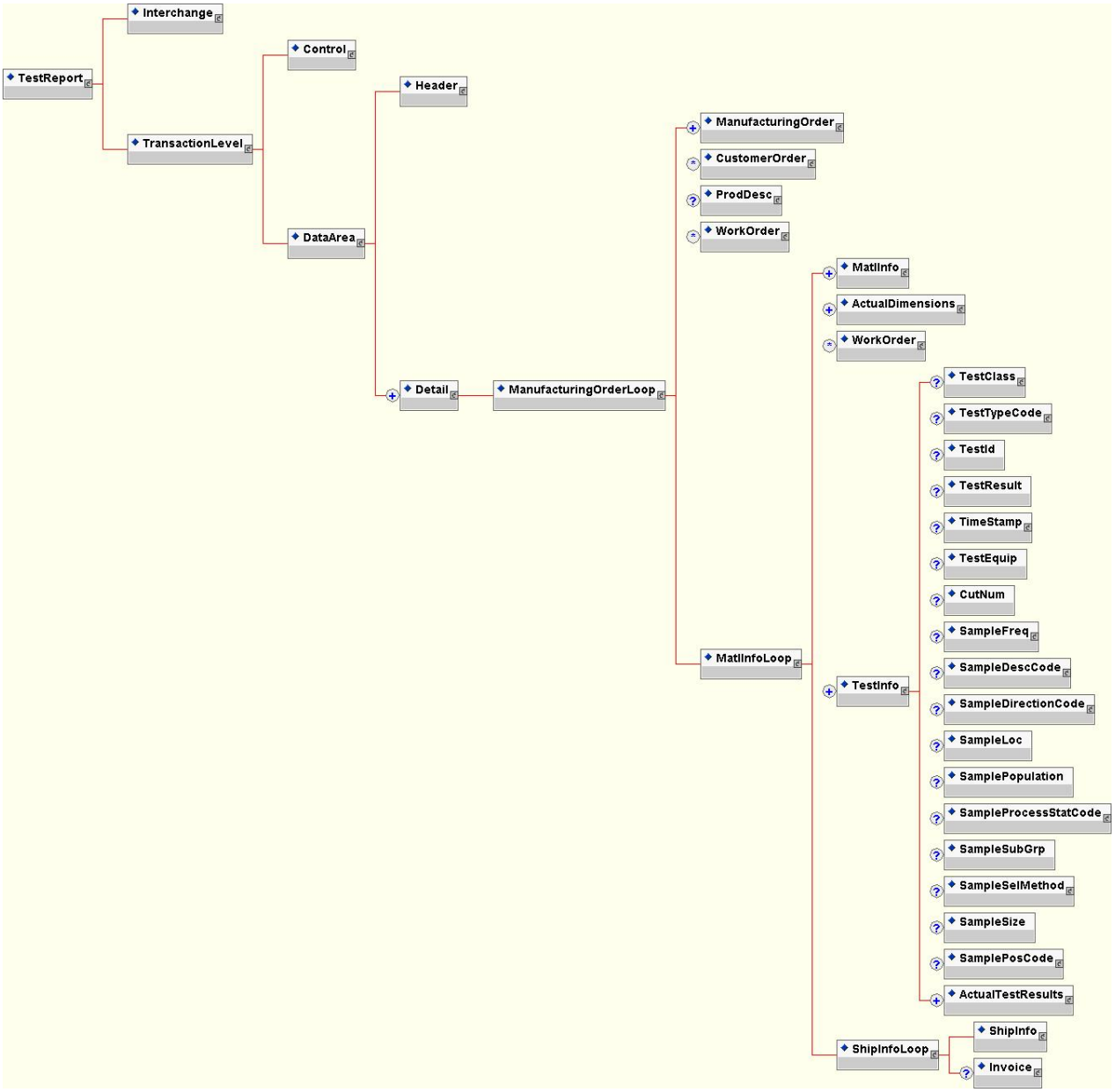
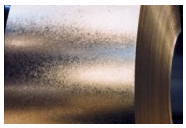
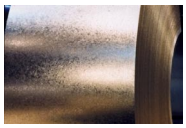


Figure 2



isXML DTD

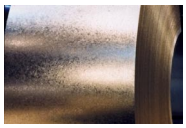
```
<?xml version="1.0" encoding="UTF-8"?>
<!ENTITY % classcommon.dtd SYSTEM "classcommon.dtd">
%classcommon.dtd;
<!ELEMENT TestReport (Interchange, TransactionLevel)>
<!-- Document Definition has envelope information and transaction information -->
<!ELEMENT TransactionLevel (Control, DataArea)>
<!ELEMENT DataArea (Header, Detail+)>
<!ELEMENT Detail (ManufacturingOrderLoop)>
<!ELEMENT ManufacturingOrderLoop (ManufacturingOrder+, CustomerOrder*, ProdDesc?, WorkOrder*,
MatlInfoLoop)>
<!ELEMENT MatlInfoLoop (MatlInfo+, ActualDimensions+, WorkOrder*, TestInfo+, ShipInfoLoop)>
<!ELEMENT ShipInfoLoop (ShipInfo, Invoice?)>
<!ELEMENT ActualDimensions (%Dimension;)>
```



Examples

The following are examples of a sample test report transaction in use. You will see a sample Test Report source document followed by both a machine-based and a text-based isXML Test Report example that matches the source document

Example: Source Document



REPORT OF TESTS AND ANALYSIS

Partner Supplier

STEEL SUPPLIER
1111 BIG STEEL ROAD
STEEL TOWN, USA 10001-1111

ORDER 12345678

LOAD 944017 — Ship Info

Partner Sold-To

S NEW STEEL CORPORATION
O 123 EAST MAIN STREET
L ANYTOWN, USA 12345
D

S NEW STEEL PROCESSOR
H c/o NEW STEEL CORP
I 987 WEST MAIN STREET
P ANYTOWN, USA 12346

Partner Ship-To

PART NO: PT#98765

SPEC

Instructions

SPEC: GALVANIZED SHEETS CARBON
DDS
INSP: 01 MILL INSPECTION RA/SN ALSO RA/LT TEST RESULTS WITH LOAD,
CERTIFIED T/R TO FOLLOW REPORT TENSILES-MPA OR N/SQMM,
TENSILES-KSI, N VALUE REPORT INFO ONLY R-VALUES.,

ITEM NO.	THICKNESS OR SECT	WIDTH DIA OR FT.WT.	HEAT NO.	TEST OR PIECE IDENTITY	PIECE WEIGHT
01	.0473IN	040.270IN	F20453	M1037682010	41220

MatlInfo

TENSILE TEST YLD PT = PSI 22679 TNSL STR = PSI 41705
TENSILE TEST YLD PT = KSI 22.7 TNSL STR = KSI 41.7
TENSILE TEST YLD PT = MPA 156 TNSL STR = MPA 288
TENSILE TEST YLD PT = KSM [illegible] TNSL STR = KSM 29.4
% ELONG = 48.5 % RED AREA = [illegible] N VALUE = .239

RBAR = 1.75

COATING WEIGHT TOP: 63 G / SQ M
BTM: 72 G / SQ M

TEST RESULTS

HEAT	TYPE	C	MN	P	S	SI	CU	NI	CR	MO
F20453	HEAT	0.0020	0.1470	0.0050	0.0080	0.0100	0.0100	0.0100	0.0300	0.0040
		SN	AL	N	V	B	TI	CB	ZR	CA
		0.0070	0.0310	0.0050	0.0050	0.0010	0.0640	0.0010	0.0020	0.0010

THIS IS THE PRELIMINARY TEST REPORT
THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MFGD., SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS REQUIREMENTS IN SUCH RESPECT. PREPARED BY THE OFFICE OF: I M A METALLURGIST, MGR QA & TECH

Example: Machine-Based Version

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE TestReport SYSTEM "TestReport.dtd">
<TestReport>
    <Interchange/>
    <TransactionLevel>
        <Control/>
        <DataArea>
            <Header>
                <ActionCode>
                    <AgencyQualCode>AX</AgencyQualCode>
                    <TableNum>306</TableNum>
                    <CodeValue>5</CodeValue>
                    <Desc>Send</Desc>
                </ActionCode>
                <ReportTransmissionCode>
                    <AgencyQualCode>AX</AgencyQualCode>
                    <TableNum>756</TableNum>
                    <CodeValue>9</CodeValue>
                    <Desc>Electronic Mail</Desc>
                </ReportTransmissionCode>
                <Partner PartnerType="Supplier">
                    <Name>Steel Supplier</Name>
                    <Addr1>1111BIG STEEL ROAD </Addr1>
                    <CityName>STEEL TOWN</CityName>
                    <StateOrProvinceCode/>
                    <PostalCode>10001-1111</PostalCode>
                    <CountryCode>
                        <Desc>USA</Desc>
                    </CountryCode>
                </Partner>
                <Partner PartnerType="SoldTo">
                    <Name>New Steel Corporation</Name>
                    <Addr1>123 East Main Street </Addr1>
                    <CityName>AnyTown</CityName>
                    <StateOrProvinceCode/>
                    <PostalCode>12345</PostalCode>
                    <CountryCode>
                        <Desc>USA</Desc>
                    </CountryCode>
                </Partner>
                <Partner PartnerType="ShipTo">
                    <Name>New Steel Processor</Name>
                    <Addr1>c/o New Steel Corp </Addr1>
                    <Addr2>987 West Main Street</Addr2>
                    <CityName>AnyTown</CityName>
                    <StateOrProvinceCode/>
```

Partner Supplier

Partner Sold-To

Partner Ship-To

Example: Machine-Based Version (con't)

```
                <PostalCode>12346</PostalCode>
                <CountryCode>
                    <Desc>USA</Desc>
                </CountryCode>
            </Partner>
        </Header>
        <Detail>
            <ManufacturingOrderLoop>
                <ManufacturingOrder>
                    <MillOrderNum>12345678</MillOrderNum>
                </ManufacturingOrder>
                <ProdDesc>
                    <Spec>GALVANIZED SHEETS CARBON</Spec>
                    <InspectInstructions>01 MILL INSPECTION RA/SN ALSO RA/LT TEST RESULTS
WITH LOAD, CERTIFIED T/R TO FOLLOW ERPORT TENSILES-MPA OR N/SQMM, TENSILES-KSI, N
VALUE REPORT INFOR ONLY R-VALUES.</InspectInstructions>
                </ProdDesc>
                <MatlInfoLoop>
                    <MatlInfo>
                        <MatlId MatlIdType="Producer">M1037682010</MatlId>
                        <HeatNum>F20453</HeatNum>
                    </MatlInfo>
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                        <Len>
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                            <UnitOrBasisForMeasCode>
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                                <TableNum>24</TableNum>
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                                <Desc>LINEAL FEET</Desc>
                            </UnitOrBasisForMeasCode>
                        </Len>
                        <Thk>
                            <MeasValue>.0473</MeasValue>
                            <UnitOrBasisForMeasCode>
                                <AgencyQualCode>AX</AgencyQualCode>
                                <TableNum>355</TableNum>
                                <CodeValue>IN</CodeValue>
                                <Desc>INCH</Desc>
                            </UnitOrBasisForMeasCode>
                        </Thk>
                        <Width>
                            <MeasValue>40.270</MeasValue>
                            <UnitOrBasisForMeasCode>
                                <AgencyQualCode>AX</AgencyQualCode>
                                <TableNum>355</TableNum>
                                <CodeValue>IN</CodeValue>
                                <Desc>INCH</Desc>
                            </UnitOrBasisForMeasCode>
```

SPEC

Instructions

MatlInfo

Example: Machine-Based Version (con't)

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                <Desc>POUNDS</Desc>
            </UnitOrBasisForMeasCode>
        </Weight>
    </ActualDimensions>
    <TestInfo>
        <ActualTestResults>
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                <AgencyQualCode>AX</AgencyQualCode>
                <TableNum>737</TableNum>
                <CodeValue>TR</CodeValue>
                <Desc>TEST RESULT</Desc>
            </MeasRefIdCode>
            <MeasQual>
                <AgencyQualCode>ST</AgencyQualCode>
                <TableNum>32</TableNum>
                <CodeValue>092</CodeValue>
                <Desc>YIELD POINT</Desc>
            </MeasQual>
            <MeasValue>22679</MeasValue>
            <UnitOrBasisForMeasCode>
                <AgencyQualCode>AX</AgencyQualCode>
                <TableNum>355</TableNum>
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        <ActualTestResults>
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            <MeasValue>41705</MeasValue>
            <UnitOrBasisForMeasCode>
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```

TEST RESULTS

Example: Machine-Based Version (con't)

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            <Desc>POUNDS PER SQUARE INCH</Desc>
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    <ActualTestResults>
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            <Desc>KILO POUNDS PER SQUARE INCH</Desc>
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    <ActualTestResults>
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Example: Machine-Based Version (con't)

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        </MeasRefIdCode>
        <MeasQual>
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        <MeasValue>156</MeasValue>
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            <Desc>MEGA PASCALS</Desc>
        </UnitOrBasisForMeasCode>
    </ActualTestResults>
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            <TableNum>737</TableNum>
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            <TableNum>737</TableNum>
            <CodeValue>TR</CodeValue>
            <Desc>TEST RESULT</Desc>
        </MeasRefIdCode>
        <MeasQual>
            <AgencyQualCode>ST</AgencyQualCode>
```

Example: Machine-Based Version (con't)

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            <TableNum>32</TableNum>
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    <ActualTestResults>
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            <TableNum>737</TableNum>
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            <CodeValue>094</CodeValue>
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        <MeasValue>48.5</MeasValue>
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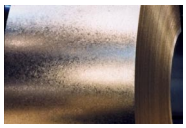
```



Example: Machine-Based Version (con't)

```
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            <TableNum>737</TableNum>
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        <MeasQual>
            <AgencyQualCode>ST</AgencyQualCode>
            <TableNum>32</TableNum>
            <CodeValue>095</CodeValue>
            <Desc>REDUCTION OF AREA %</Desc>
        </MeasQual>
        <MeasValue>0.0</MeasValue>
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            <TableNum>737</TableNum>
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            <Desc>n Value</Desc>
        </MeasQual>
        <MeasValue>.239</MeasValue>
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    <ActualTestResults>
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            <TableNum>737</TableNum>
            <CodeValue>TR</CodeValue>
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        <MeasQual>
            <AgencyQualCode>ST</AgencyQualCode>
            <TableNum>32</TableNum>
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            <Desc>R-BAR</Desc>
        </MeasQual>
        <MeasValue>1.75</MeasValue>
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        <MeasRefIdCode>
            <AgencyQualCode>AX</AgencyQualCode>
            <TableNum>737</TableNum>
            <CodeValue>TR</CodeValue>
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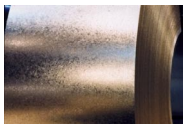

Example: Machine-Based Version (con't)

```
            <Desc>TEST RESULT</Desc>
        </MeasRefIdCode>
        <MeasQual>
            <AgencyQualCode>ST</AgencyQualCode>
            <TableNum>32</TableNum>
            <CodeValue>034</CodeValue>
            <Desc>COATING WEIGHT TOP</Desc>
        </MeasQual>
        <MeasValue>63</MeasValue>
        <UnitOrBasisForMeasCode>
            <AgencyQualCode>AX</AgencyQualCode>
            <TableNum>355</TableNum>
            <CodeValue>GM</CodeValue>
            <Desc>GRAM PER SQ METER</Desc>
        </UnitOrBasisForMeasCode>
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    <ActualTestResults>
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            <TableNum>737</TableNum>
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            <Desc>TEST RESULT</Desc>
        </MeasRefIdCode>
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            <AgencyQualCode>ST</AgencyQualCode>
            <TableNum>32</TableNum>
            <CodeValue>035</CodeValue>
            <Desc>COATING WEIGHT BOTTOM</Desc>
        </MeasQual>
        <MeasValue>72</MeasValue>
        <UnitOrBasisForMeasCode>
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            <TableNum>72</TableNum>
            <CodeValue>GM</CodeValue>
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    <ActualTestResults>
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            <Desc>CHEMISTRY</Desc>
        </MeasRefIdCode>
        <MeasQual>
            <AgencyQualCode>AX</AgencyQualCode>
            <TableNum>738</TableNum>
            <CodeValue>ZC</CodeValue>
            <Desc>CARBON</Desc>
```

Example: Machine-Based Version (con't)

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        </MeasQual>
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            <TableNum>355</TableNum>
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            <Desc>PERCENT</Desc>
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        </MeasRefIdCode>
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            <TableNum>355</TableNum>
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        </MeasQual>
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            <Desc>PERCENT</Desc>
```

Example: Machine-Based Version (con't)

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```

Example: Machine-Based Version (con't)

```
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```

Example: Machine-Based Version (con't)

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            <TableNum>738</TableNum>
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            <Desc>TIN</Desc>
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            <TableNum>355</TableNum>
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```

Example: Machine-Based Version (con't)

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            <TableNum>737</TableNum>
            <CodeValue>CH</CodeValue>
```

Example: Machine-Based Version (con't)

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            <TableNum>738</TableNum>
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```

Example: Machine-Based Version (con't)

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            <Desc>COLUMBIUM</Desc>
        </MeasQual>
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            <TableNum>738</TableNum>
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            <Desc>PERCENT</Desc>
```

Example: Machine-Based Version (con't)

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                            <Desc>PERCENT</Desc>
                        </UnitOrBasisForMeasCode>
                    </ActualTestResults>
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                    <ShipInfo>
                        <ShipId>944017</ShipId>
                        <BillOfLading/>
                        <MasterBillOfLading/>
                        <ApptNum/>
                    </ShipInfo>
                </ShipInfoLoop>
            </MatlInfoLoop>
        </ManufacturingOrderLoop>
    </Detail>
</DataArea>
</TransactionLevel>
</TestReport>
```

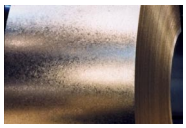
Example: Text-Based Version

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE TestReport SYSTEM "TestReport.dtd">
<TestReport>
    <Interchange/>
    <TransactionLevel>
        <Control/>
        <DataArea>
            <Header>
                <ActionCode>
                    <Desc>Send</Desc>
                </ActionCode>
                <ReportTransmissionCode>
                    <Desc>Electronic Mail</Desc>
                </ReportTransmissionCode>
                <Partner PartnerType="Supplier">
                    <Name>Steel Supplier</Name>
                    <Addr1>1111BIG STEEL ROAD </Addr1>
                    <CityName>STEEL TOWN</CityName>
                    <StateOrProvinceCode/>
                    <PostalCode>10001-1111</PostalCode>
                    <CountryCode>
                        <Desc>USA</Desc>
                    </CountryCode>
                </Partner>
                <Partner PartnerType="SoldTo">
                    <Name>New Steel Corporation</Name>
                    <Addr1>123 East Main Street </Addr1>
                    <CityName>AnyTown</CityName>
                    <StateOrProvinceCode/>
                    <PostalCode>12345</PostalCode>
                    <CountryCode>
                        <Desc>USA</Desc>
                    </CountryCode>
                </Partner>
                <Partner PartnerType="ShipTo">
                    <Name>New Steel Processor</Name>
                    <Addr1>c/o New Steel Corp </Addr1>
                    <Addr2>987 West Main Street</Addr2>
                    <CityName>AnyTown</CityName>
                    <StateOrProvinceCode/>
                    <PostalCode>12346</PostalCode>
                    <CountryCode>
                        <Desc>USA</Desc>
                    </CountryCode>
                </Partner>
            </Header>
            <Detail>
                <ManufacturingOrderLoop>
```

Partner Supplier

Partner Sold-To

Partner Ship-To



Example: Text-Based Version (con't)

```
<ManufacturingOrder>
    <MillOrderNum>12345678</MillOrderNum>
</ManufacturingOrder>
<ProdDesc>
    <Spec>GALVANIZED SHEETS CARBON</Spec>
    <InspectInstructions>01 MILL INSPECTION RA/SN ALSO RA/LT TEST RESULTS
WITH LOAD, CERTIFIED T/R TO FOLLOW ERPORT TENSILES-MPA OR N/SQMM, TENSILES-KSI, N
VALUE REPORT INFOR ONLY R-VALUES.</InspectInstructions>
</ProdDesc>
<MatlInfoLoop>
    <MatlInfo>
        <MatlId MatlIdType="Producer">M1037682010</MatlId>
        <HeatNum>F20453</HeatNum>
    </MatlInfo>
    <ActualDimensions>
        <Len>
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            <UnitOrBasisForMeasCode>
                <Desc>LINEAL FEET</Desc>
            </UnitOrBasisForMeasCode>
        </Len>
        <Thk>
            <MeasValue>.0473</MeasValue>
            <UnitOrBasisForMeasCode>
                <Desc>INCH</Desc>
            </UnitOrBasisForMeasCode>
        </Thk>
        <Width>
            <MeasValue>40.270</MeasValue>
            <UnitOrBasisForMeasCode>
                <Desc>INCH</Desc>
            </UnitOrBasisForMeasCode>
        </Width>
        <Weight>
            <MeasValue>41220</MeasValue>
            <UnitOrBasisForMeasCode>
                <Desc>POUNDS</Desc>
            </UnitOrBasisForMeasCode>
        </Weight>
    </ActualDimensions>
    <TestInfo>
        <ActualTestResults>
            <MeasRefIdCode>
                <Desc>TEST RESULT</Desc>
            </MeasRefIdCode>
            <MeasQual>
                <Desc>YIELD POINT</Desc>
            </MeasQual>
            <MeasValue>22679</MeasValue>
```

SPEC

Instructions

MatlInfo

TEST RESULTS

Example: Text-Based Version (con't)

```
        <UnitOrBasisForMeasCode>
            <Desc>POUNDS PER SQUARE INCH</Desc>
        </UnitOrBasisForMeasCode>
    </ActualTestResults>
    <ActualTestResults>
        <MeasRefIdCode>
            <Desc>TEST RESULT</Desc>
        </MeasRefIdCode>
        <MeasQual>
            <Desc>TENSILE STRENGTH</Desc>
        </MeasQual>
        <MeasValue>41705</MeasValue>
        <UnitOrBasisForMeasCode>
            <Desc>POUNDS PER SQUARE INCH</Desc>
        </UnitOrBasisForMeasCode>
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    <ActualTestResults>
        <MeasRefIdCode>
            <Desc>TEST RESULT</Desc>
        </MeasRefIdCode>
        <MeasQual>
            <Desc>YIELD POINT</Desc>
        </MeasQual>
        <MeasValue>22.7</MeasValue>
        <UnitOrBasisForMeasCode>
            <Desc>KILO POUNDS PER SQUARE INCH</Desc>
        </UnitOrBasisForMeasCode>
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    <ActualTestResults>
        <MeasRefIdCode>
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        </MeasRefIdCode>
        <MeasQual>
            <Desc>TENSILE STRENGTH</Desc>
        </MeasQual>
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            <Desc>KILO POUNDS PER SQUARE INCH</Desc>
        </UnitOrBasisForMeasCode>
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        </MeasRefIdCode>
        <MeasQual>
            <Desc>YIELD POINT</Desc>
        </MeasQual>
        <MeasValue>156</MeasValue>
        <UnitOrBasisForMeasCode>
```

Example: Text-Based Version (con't)

```
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        </UnitOrBasisForMeasCode>
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    <ActualTestResults>
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            <Desc>TEST RESULT</Desc>
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        <MeasQual>
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        </MeasQual>
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        </UnitOrBasisForMeasCode>
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    <ActualTestResults>
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            <Desc>TEST RESULT</Desc>
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            <Desc>YIELD POINT</Desc>
        </MeasQual>
        <MeasValue>16.0</MeasValue>
        <UnitOrBasisForMeasCode>
            <Desc>KILOGRAMS PER SQUARE METER</Desc>
        </UnitOrBasisForMeasCode>
    </ActualTestResults>
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        <MeasRefIdCode>
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        </MeasRefIdCode>
        <MeasQual>
            <Desc>TENSILE STRENGTH</Desc>
        </MeasQual>
        <MeasValue>29.4</MeasValue>
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        </MeasQual>
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    <ActualTestResults>
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Example: Text-Based Version (con't)

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        </MeasQual>
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        </MeasQual>
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        </MeasQual>
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```

Example: Text-Based Version (con't)

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    </MeasQual>
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    </MeasRefIdCode>
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Example: Text-Based Version (con't)

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Example: Text-Based Version (con't)

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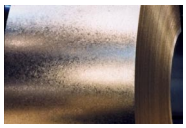

Example: Text-Based Version (con't)

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Example: Text-Based Version (con't)

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Appendices