INDUSTRY RESOURCE DOCUMENT

CRSI Standard Mill Barcodes

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Benefits of Using CRSI Mill Barcodes

aSa Bundle Inventory allows you to relieve stock inventory as you open mill bundles for fabrication by simply scanning barcoded tags. Mill tag barcodes make the system even more convenient: rather than retagging items with aSa-generated stock tags, you can simply scan the mill tags already attached to your material.

The Concrete Reinforcing Steel Institute (CRSI) has developed a format for barcodes on mill bundle tags, and the organization is encouraging all mills to adopt the new standard. If your mill tags don't include the CRSI barcode, contact your mill representative.

Let your mill representative know that this is an important value-added service that you want.

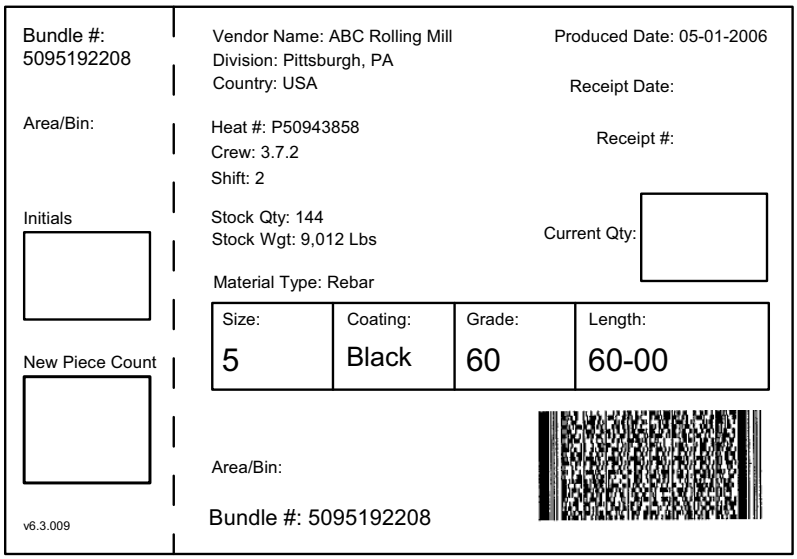
CRSI Barcode Standard

The following pages contain a document developed by CRSI explaining the mill barcode standard.

Mill Bundle - 2D Barcode Standard

Mill - 2D Barcode Standard

Sample 2D Barcode — contains all information about the bundle, including quantity, size, grade, length, heat number, etc. Does not need to link back to a network or database to provide data to rebar client.



Mill - 2D Barcode Standard

Sample Data	Code	Description	Required
BCFM2D		Barcode Header	X
5095192208	**n**	Mill Bundle Number or Coil Number	X
ABC Rolling Mill	**m**	Mill	X
Pittsburgh, PA	**v**	Division	
USA	**c**	Country	X
III	**u**	Units of Measure (Size, Length, Weight)Metric=MMM	X
D	**r**	Deformed or Plain	X
S	**t**	Straight, Coil, or Rod	X
5	**d**	Size	X
60-00	**l**	Length (Required for straight stock only) (fff-ii or mm)	
60	**g**	Grade	X
ASTM A 615	**s**	Specification	X
P50943858	**h**	Heat Number	X
2007-05-18	**y**	Rolling date (yyyy-mm-dd)	
3.7.2	**e**	Crew	
2	**a**	Shift	
144	**q**	Bundle Quantity (Required for straight stock only)	
9012	**w**	Bundle or Coil Weight (Lbs or Kgs)	X
E	**x**	Coating (Epoxy, Galvanized, etc.)	
Pittsburgh Coating	**f**	Coating Facility	
070345890	**b**	Coating Batch / Powder Number	
2007-03-01	**z**	Coating Date (yyyy-mm-dd)	
	k	Chemistry	
C=0.39,Mn=0.96,P=0.006,S=0.029,Si=0.19,Cu=0.28,Cr=0.11,Ni=0.14,Mo=0.039,Cb=0.000,V=0.021,Sn=0.013,B=,TL=,CEq=0.57,...			
	1...9	User Fields	
	CRLF	Carriage Return Line Feed	X

Mill - 2D Barcode Standard

Notes:

- The mill barcode standard utilizes either the **PDF417** or **Data Matrix** barcode symbology.

PDF417

Data Matrix

- All data is represented using standard ASCII characters.
- Each barcode data field starts with a lower case letter for field identification (i.e. **a**…**z**) and ends with a **@** for field termination.
- The **@** character should not be used with any data fields.
- All mill barcodes begin with a recognition code **BCFM2D** which represents "Barcode Format Mill 2 Dimensional."
- All data fields are variable in length, and the order of the data fields can vary as well.
- All required data fields are marked with an **X** respectively.
- The bar size, length, and weight fields display in the barcode based on the unit of measure field **u**.
  I = Imperial, **M** = Metric, and **S** = Soft Metric
- The mill division is not a required field However, if the heat number can be duplicated across multiple divisions by the same company then the division field is required to make the heat number unique by division.
- The chemistry data **k** is stored with each element separated by a comma and an **=** separating the element and value. An example of the format is as follows: **element=decimal value,element=decimal value,…** The order of the elements can vary and the decimal precision is free-form.
- Nine (i.e. **1**…**9**) discretionary user fields are available.

Mill - 2D Barcode Standard

Sample Barcode

PDF417

Data Matrix

BCFM2D@**n**5095192208@**m**ABC Rolling Mill@**v**Pittsburgh,PA@**c**USA@**u**III@**r**D@**t**S
@**d**5@**l**60-00@**g**60@**s**ASTM A 615@**h**P50943858@**y**2007-03-01@**e**3.7.2@**a**2@**q**144@**w**9012
@**x**E@**f**Pittsburgh Coating@**b**070345890@**z**2007-05-18
@**k**C=0.39,Mn=0.96,P=0.006,S=0.029,Si=0.19,Cu,0.28,Cr=0.11,Ni=0.14,Mo=0.039,
Cb=0.000,V=0.021,Sn=0.013,B=,TL=,CEq=0.57
@**CRLF**