

Bill of Materials (BOM)

What is the Bill of Materials function?

- The Bill of Materials feature in PRIMER enables you input and output part information to and from your model.
- Part information (such as material, thickness, NIP, elform) can be read from a delimited text file.
- Part information can be checked against a reference delimited text file.
- Part information can be written to a text file or an Excel file (which can optionally contain images of the parts).

Bill of Materials

- PRIMER can read any type of delimited file (e.g. CSV file from Excel).
 - The user selects the field type from the popup menu (Model PID, thickness, material, element formulation, etc.)
 - Data is then read and applied to the CAE model.

The image shows two screenshots from the PRIMER software interface. The left screenshot displays the 'Tools' menu with 'BOM' highlighted. The right screenshot shows the 'BILL OF MATERIALS' dialog box with a 'Field type' popup menu open, listing various field types like PID, Material title, and Section ID. The dialog box also contains a table for defining fields and a 'Read or write Bill of materials file?' section with 'Read' and 'Write' buttons.

Field type popup menu options:

- PID
- Skip field
- CAD part no.
- Part description
- Material title
- Section title
- Section ID
- Hourglass ID
- Gauge
- Hourglass type
- Hourglass coeff
- Element form
- No. int pts
- Lower id
- Upper id
- Target mass
- EMP PSID
- EMP Flag

Table in BILL OF MATERIALS dialog:

Field	E	G	H	I	J	K	L
1	Section ID	Material title	Section title	Gauge	Hourglass type	Hourglass coefficient	Element form
2							
3							
4							
5							
6							
7							
8	Section ID	Material name	Section name	Gauge	HC type	HC coeff	Element form
9							
10	1000			1			2

Read or write Bill of materials file? section:

- Read: Read bill of materials file
- Write: Write bill of materials file

Reading a Bill of Materials file

- During import, first 50 lines of the file will be shown to help answer questions that PRIMER will ask regarding the format of the file.
- The user can specify how comment lines are defined during this process.
- It is also required for the user to define what the delimiter is within the file so PRIMER can correctly interpret the data.

Comparing BOM data to model.

1. **Select parts from BOM file to update:** By default PRIMER will update all parts referenced in the CSV file (“All in file”). The “Subset” option will allow the user to select a subset of the referenced parts and will then only update those parts.
2. **Which parts will be modified? – Sketch:** These options allow the user to “Sketch” or “Only” the parts that will be modified by applying the CSV file.

Define the fields in the file

24 selected PART(s) have differing information to that in the BOM file and will be updated

Select parts from BOM file to update:

All in file Subset

Select PART(s)

Which parts will be modified?

Field	A	B	C	D	E	F	G	H	I	J
1	Vehicle X	Bill of Material	8.6	Date	20/02/01					
2										
3	Part No	Title	Part ID	Material	Supplier	Gauge	Part mass			
4	AA51201	sill_swan_neck	5	P37	Company X	2.2	9.64E-03			
5	AA51202	front_support	101	P37	Company X	2.2	4.74E-03			
6	AA51203	Bumper_ft	104	P37	Company X	1	3.71E-03			
7	AA51204	A_pillar_lower	113	R4 treatment C	Company Y	1.2	2.28E-03			
8	AA51205	cowl.1	200	R4 treatment C	Company Y	1.2	6.40E-03			
9	AA51206	A_pillar_lower	202	R4 treatment C	Company Y	2	6.60E-03			
10	AA51207	dash_x_member	203	R4 plt3 grade	Company Y	1.2	2.25E-03			

Writing a BOM to a CSV file

The screenshot shows the 'Tools' menu with the following items:

Assign ms	Composite	Macro	Rigidify
Attached	Connection	Mass Prop	Safety
Banking	Cut sect	Measure	Script
BOM	Explode	Mechanism	Text Edit
Check	Find	Node Import	Units
Clipboard	Groups	Orient	Xrefs
Coat	Include	Other	
Compare	Load Path	Remove	

Below the Tools menu are sections for 'Volumes I & II' and 'Volume III' with various analysis options like AIRBAG, ALE, BOUND, CASE, COMMENT, CONSTR, CONTACT, CONTROL, DAMPING, DATABS, DEFINE, DEF_2_RG, ELEMENT, EOS, FREQ, HOURGL, INCLUDE, INITIAL, INTEGRN, INTRFCE, LOAD, MAT, NODE, PARAM, PART, PARTICLE, PERTURB, RAIL, RIGIDWALL, SECTION, SENSOR, SET, and TERMIN. At the bottom, there are buttons for 'Model', 'Part tree', 'Cut Sect', and 'Remove', and a status bar showing 'M1: Main file'.

The dialog box titled 'Read or write Bill of materials file?' has 'Dismiss', 'Apply', and 'Help' buttons at the top. It contains two options:

- Read: Read bill of materials file
- Write: Write bill of materials file**

The dialog box titled 'Select file to write Bill of materials to' has 'Dismiss', 'Apply', and 'Help' buttons at the top. It contains the following fields and options:

- File: **.csv**
- Save As: **CSV file (*.csv)**
- Remove comma & semicolon from titles
- Calculate & Write part mass info
- Write target mass from *ELEMENT_MASS_PART
- Select PART(s) to export:
 - All in file
 - Subset

Ability to export BOM part images in spreadsheet

Note the BOM information can also be written directly to an XLSX file. Optionally, the user can select to export an image of the parts being written to the XLSX file as well.

BILL OF MATERIALS

Dismiss Apply Help

Select file to write Bill of materials to

File: .xlsx

Save As: Excel file (*.xlsx)

Remove comma & semicolon from titles

Calculate & Write part mass info

Write target mass from *ELEMENT_MASS_PART

Select PART(s) to export

All in file

Subset

Export part images to excel file

White Background

Image Width(in pixels): 257

Image Height(in pixels): 166

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	Part Image	Part ID	CAD Part No	Title	Material ID	Section ID	Hourglass ID	Material name	Section name	Gauge	HG type	HG coeff	Elform	Nip	Lower id	Upper id	numel	
2		21000		BIW - upper wheel well - L - I	20578	21000	21000	MATL24_4000240	SectShll_2000001	1.28	8	0	16	3	2645312	3002018	1347	
3		21001		BIW - wheel well- L - F	20578	21001	21000	MATL24_4000240	SectShll_2000002	0.86	8	0	16	3	2646979	3003777	1273	
4		21002		BIW - shock housing - L	20577	21002	21000	MATL24_4000210	SectShll_2000003	1.42	8	0	16	3	2647010	3005669	1812	
5		21003		BIW - rail plate 1 - L	20580	21003	21000	MATL24_4000340	SectShll_2000004	2.51	8	0	16	3	2651452	3007182	408	
6		21006		BIW - rail plate 2 - L	21010	21006	0	MATL24_4000300	SectShll_2000007	1.52				2	3	2655867	3011703	547
7		21007		BIW - shock housing top - L	21010	21007	0	MATL24_4000300	SectShll_2000008	2.07				2	3	2655877	3011770	238



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