

Configuring Materials

This application note describes some important differences between the material list in ProHelp® Millennium and the material list in ProHelp® EPM.

1. Overview

At first glance, it might appear that the material list in ProHelp® EPM, Release 6.3.0, is identical to the material list in ProHelp® Millennium.

It is a fact that if these two lists are configured appropriately, you should expect to see identical numbers with regards to material used, material forecasts, etc.

However, it is also a fact that the material list in ProHelp® Millennium is configured differently from the material list in ProHelp® EPM. This Application Note will point out many of those differences.

2. Dissecting a ProHelp® Millennium Job Descriptor

Consider for a moment the following material list (in a job descriptor) in ProHelp® Millennium:

```

XXX # MaterialTest
PART # ██████████
NAME
TOOL #          TEST
CUST NM          ID
MACHINE # 50     CLASS MATL
PARTS  LOT SIZE  500000

MATL TYPE      CODE          UNITS OF MEASURE  STANDARD  ACTUAL
#1 Primary Material1  lbs /1000 SHOTS   1000.0    1000.0
#2 Additive Material2 lbs /1000 SHOTS   500.0     500.0
#3 Auxiliary Boxes   each /1000 PARTS  100.0
#4
#5
#6
#7
#8
#9
#10
TOTAL SHOT WEIGHT lbs /1000 SHOTS   1500.0    1500.0
TOTAL PART WEIGHT lbs /1000 PARTS    210.0
PRIMARY MATL % REGRIND 10.0      0.0
SETUP MATERIAL (lbs)  50.0     0.0
  
```

Job # 2 Mach # 3 Disply 4 5 6 7SUMat1 8 9 10

Material List – ProHelp® Millennium

This list is simple enough. The job has 3 materials, including an Auxiliary material named “boxes”.

A few notes:

- The above job has 5 total cavities (not shown).
- The “standard” materials (Material1 and Material2) are configured in weights per “1000 shots”, not per “1000 parts”. Therefore, the standard weight of 1000.0 pounds for Material1 represents 5000 parts (1000 shots times 5 cavities).

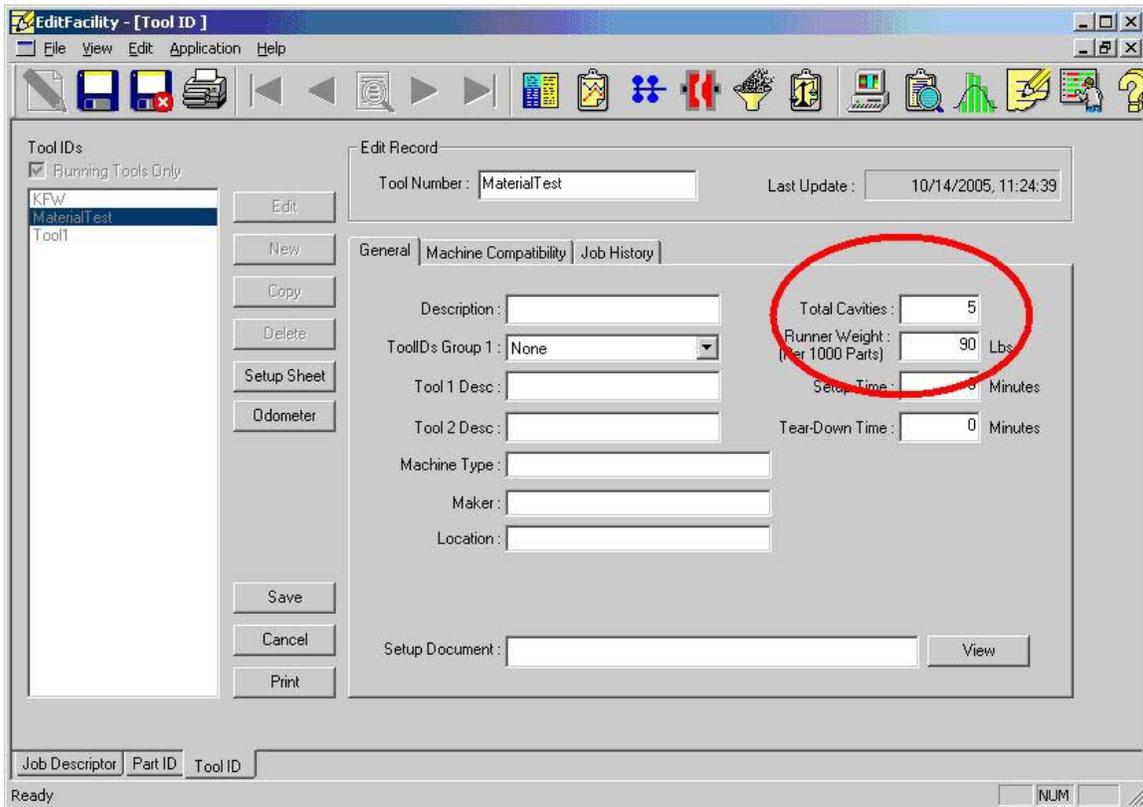
- Conversely, the “part weight” is configured per “1000 parts”, not per “1000 shots”. Since the part weight can not exceed the calculated shot weight, the maximum part weight is 300 pounds (1500.0 divided by 5 cavities). The actual part weight is 210.0.

TOTAL SHOT WEIGHT	lbs	/1000 SHOTS	1500.0	1500.0
TOTAL PART WEIGHT	lbs	/1000 PARTS	210.0	
PRIMARY MATL % REGRIND			10.0	0.0

Therefore, the runner weight for 1000 parts is 90 pounds (1500.0/5 – 210.0).

3. Translating Data into ProHelp® EPM

Imagine for a moment that we wish to copy the ProHelp® Millennium material list into ProHelp® EPM. We’ve already stated that the job descriptor has 5 cavities and calculated that the runner weight for 1000 parts is 90 pounds ((1500.0 / 5) – 210.0). This data is entered into the corresponding Tool ID:



Tool ID – ProHelp® EPM

A casual reader might think that you simply copy the remaining material list, unmodified, from ProHelp® Millennium to ProHelp® EPM's corresponding Part ID. This is not the case.

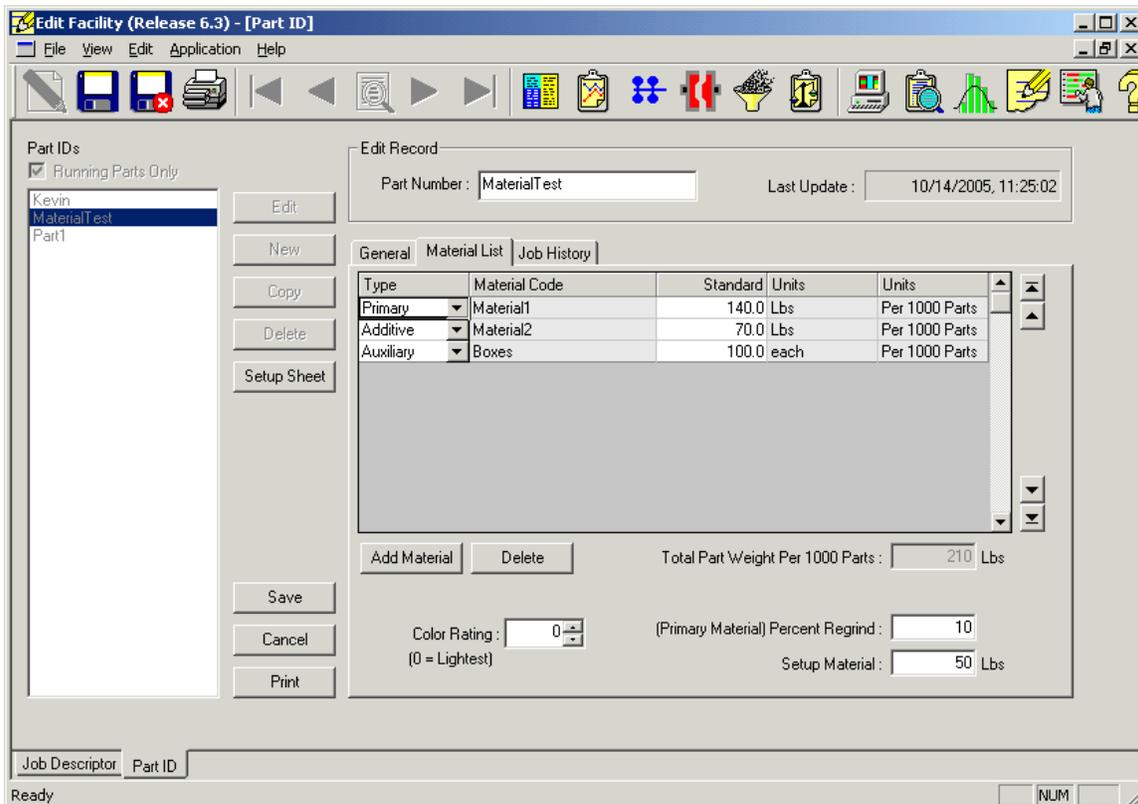
Consider again the original ProHelp® Millennium material list:

MATL	TYPE	CODE	UNITS OF MEASURE	STANDARD	ACTUAL
#1	Primary	Material1	lbs /1000 SHOTS	1000.0	1000.0
#2	Additive	Material2	lbs /1000 SHOTS	500.0	500.0
#3	Auxiliary	Boxes	each /1000 PARTS	100.0	
#4				0.0	

The standard materials, Material1 and Material2, are configured to use 1000.0 and 500.0 pounds of material per 1000 shots, respectively. Noteworthy is that these weights are per shot (not per part) and that they include runner weight.

The total shot weight for the job is 1500.0 pounds (1000.0 plus 500.0). Therefore, 2/3rd of all runner weight is allocated to Material1 (1000.0 divided by 1500.0) and 1/3rd of all runner weight is allocated to Material2 (500.0 divided by 1500.0).

The resulting Part ID in ProHelp® EPM will look like the following:



Part ID – ProHelp® EPM

You'll notice that Material1 is configured to use 140.0 pounds per 1000 parts. This was computed as follows:

$$\begin{aligned}\text{Weight Per 1000 Parts} &= (\text{Weight Per 1000 Shots}) / (\text{Number of Cavities}) \\ \text{Weight Per 1000 Parts} &= (1000.0) / 5 = 200.0 \text{ pounds}\end{aligned}$$

$$\begin{aligned}\text{Standard Part Weight} &= (\text{Weight Per 1000 Parts}) - (\text{Proportional Runner Weight}) \\ \text{Standard Part Weight} &= 200.0 - (2/3)(90) = 200.0 - 60 = 140.0 \text{ pounds}\end{aligned}$$

Similarly, you'll notice that Material2 is configured to use 70.0 pounds per 1000 parts. This was computed as follows:

$$\begin{aligned}\text{Weight Per 1000 Parts} &= (500.0) / 5 = 100.0 \text{ pounds} \\ \text{Standard Part Weight} &= (100.0) - (1/3)(90) = 70.0 \text{ pounds}\end{aligned}$$

Finally, the Auxiliary material Boxes is configured to use 100.0 boxes per 1000 parts. This corresponds precisely to the configuration in ProHelp® Millennium because the original configuration was "Per 1000 Parts". We could have optionally configured the material in ProHelp® Millennium to be "Per 1000 Shots", in which case we would have needed to divide by the number of cavities (5).