



**SHOTPlus™**

SHOTPlus Standard  
Blasthole Charging

March 2017



# DEFINING A DEFAULT CHARGING DESIGN FOR NON-ELECTRIC INITIATION



1. **Surface tail length** – minimum length of Exel signal tube or EBS lead wire required at collar
2. **Tube wastage** – factor applied to account for any lead or signal tube slack in a hole or at the surface
3. **Primer stand-off** – distance of primer from top / bottom of deck

A screenshot of a software dialog box titled "Edit blast properties". The dialog has a sidebar on the left with a tree view containing the following items: "Blast header information", "EBS", "Hole types", "Initiation", "Loading chart options", and "Loading options" (which is currently selected and highlighted in blue). The main area of the dialog is titled "Loading options" and contains the following settings:

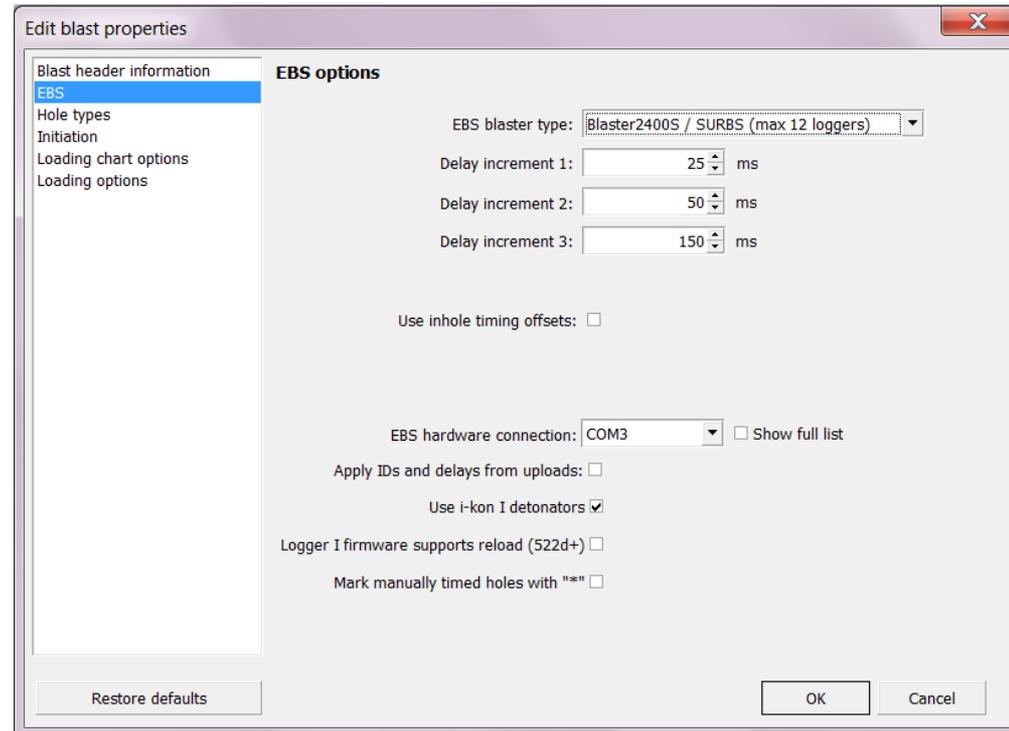
- Surface tail length: 2.0 (m)
- Inhole tube wastage: 5.0 %
- Surface tie-up wastage: 5.0 %
- Primer stand off distance: 1.0 (m)
- Include packaged products as primers:
- Include primer in charge weights:
- Item count rounding: Round to nearest (dropdown menu)

At the bottom of the dialog, there are three buttons: "Restore defaults" on the left, and "OK" and "Cancel" on the right.

# DEFINING A DEFAULT CHARGING DESIGN FOR EBS INITIATION



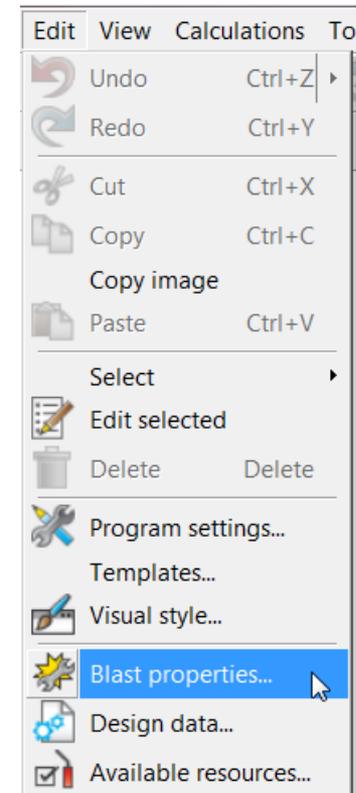
1. **Blaster Type** – SURBS, SURBS Synchro, UT, UT Synchro
2. **Delay Increments** – Set delay increments for EBS timing (can be changed through timing tools)
3. **EBS connection** – define COM port for EBS connections



# DEFINING A DEFAULT CHARGING DESIGN

Users can define a number of default loading options that will influence the lead length and position of initiators used in the charging design

- Loading options can be accessed under the **Edit-Blast properties** menu item



# DEFINING A DEFAULT CHARGING DESIGN



In the **Edit Loading** window, the charging design for the Hole Type can be defined, this can consist of;

1. Multiple decks
2. Multiple initiators
3. Displayed graphically

The screenshot shows the 'Edit loading' window with the following data:

#	V...	Explosive	Length	Weight	#It...	L.Fac	Cord
3		Stemming(2.5)	4.5	0.0	0.0	1.00	<input type="checkbox"/>
2	↓	Fortan Coal 10 CS	15.0	617.8	0.0	1.00	<input type="checkbox"/>
1		ANFO 0.8 CS	5.0	164.7	0.0	1.00	<input type="checkbox"/>

#	Initiator	De...	Booster	Num.	i-kon ID	Offset	Delay
2	i-kon RX detonator	18.5	Pentex PPP	1	00000000	0	Undef.
1	i-kon RX detonator	23.5	Pentex PPP	1	00000000	0	Undef.

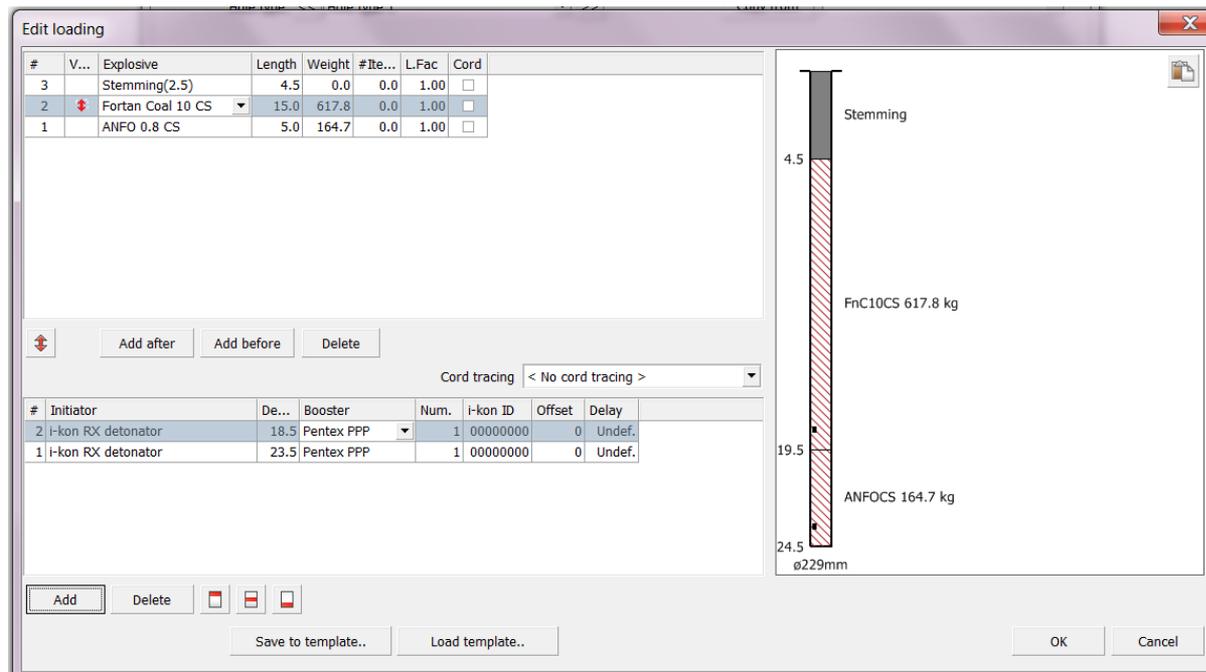
Graphical representation of the hole design (ø229mm):

- Stemming: 4.5
- FnC10CS 617.8 kg: 15.0
- ANFOCS 164.7 kg: 5.0
- Total length: 24.5

# SAVING LOADING TEMPLATES

A defined charging design (decks and initiators) can be saved as a template for future use

1. Select **Save to file** to save a charging template
2. Select **Load file** to import a previously saved charging template



# AUTOMATIC LOADING WITH RULES

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SHOTPlus allows the creation of rules to control the specific application of your defined charging design

Loading Rules provide a quick and efficient method to;

1. load a large volume of holes in your design
2. load complicated designs with varying charging requirements

**Each charge design rule** can have **one or more conditions** specified to control the application of that rule

Conditions are essentially **IF** statements

When multiple conditions are used, then the criteria for all conditions must be met (i.e. **IF AND**, not **IF OR**)

If the condition criteria are met, by a blast hole, then that hole will be charged according to the specified rule, for example

- › *If the blast hole is greater than 10metres in length, then charge with...*

# AUTOMATIC LOADING WITH RULES

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Rules are applied to blast holes sequentially (i.e. in the order that they are defined)

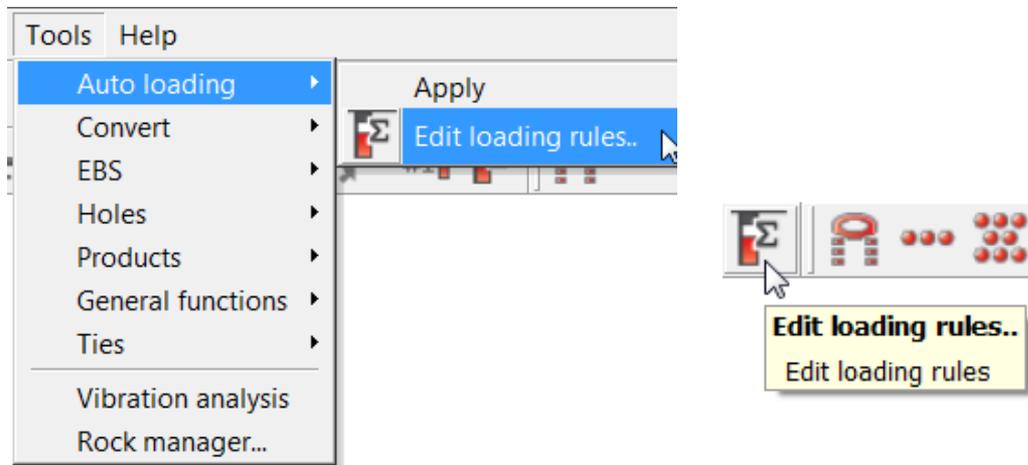
Once a hole is loaded it can not be reloaded by another rule, even if it meets the new rule criteria

Therefore the sequence that you define the rules is critical

# DEFINING A LOADING RULE

A charging design can also be defined using the **Edit loading rules** function, accessible via

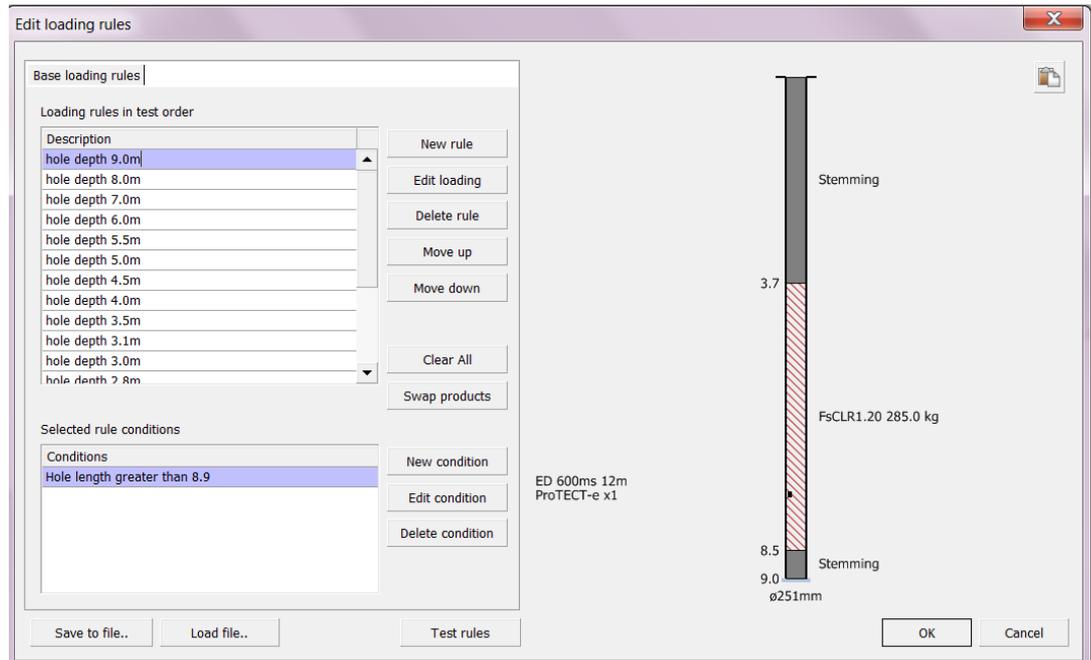
1. The **Tools-Auto loading-Edit loading rules** menu item
2. The **Edit loading rules** button on the **Loading Tools** tool bar (usually docked at top of screen)



# DEFINING A LOADING RULE

In the **Edit loading rules** window, condition based rules can be created.

- Multiple rules can be created to suit different conditions.
- Conditions specified control the application of the rules. Rules defined by:
  - Length
  - Diameter
  - Hole Angle
  - Hole Type
- Example loading provided



# DEFINING A LOADING RULE

The charging design for a rule is completed as per the previously described process

hole depth 9.0m

#	V...	Explosive	Length	Weight	#Ite...	L.Fac	Cord
3		Stemming(2.5)	3.7	0.0	0.0	1.00	<input checked="" type="checkbox"/>
2	↓	Fortis Clear 1.2 CS	4.8	285.0	0.0	1.00	<input type="checkbox"/>
1		Stemming(2.5)	0.5	0.0	0.0	1.00	<input type="checkbox"/>

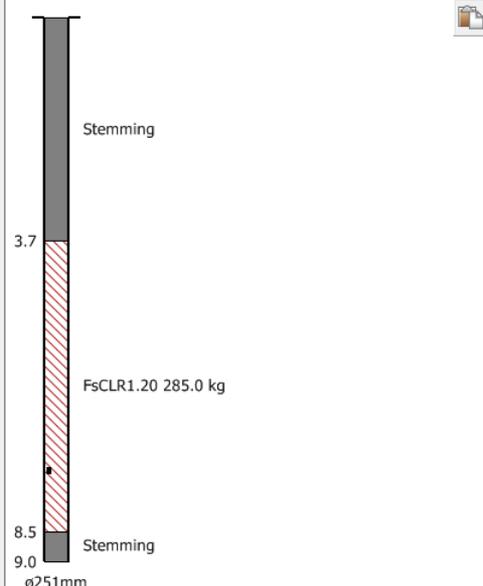
↑ Add after Add before Delete

Cord tracing < No cord tracing >

#	Initiator	De...	Booster	Num.
1	Exel Enduradet ( 600ms)#15	7.5	ProTECT-e	1

Add Delete 

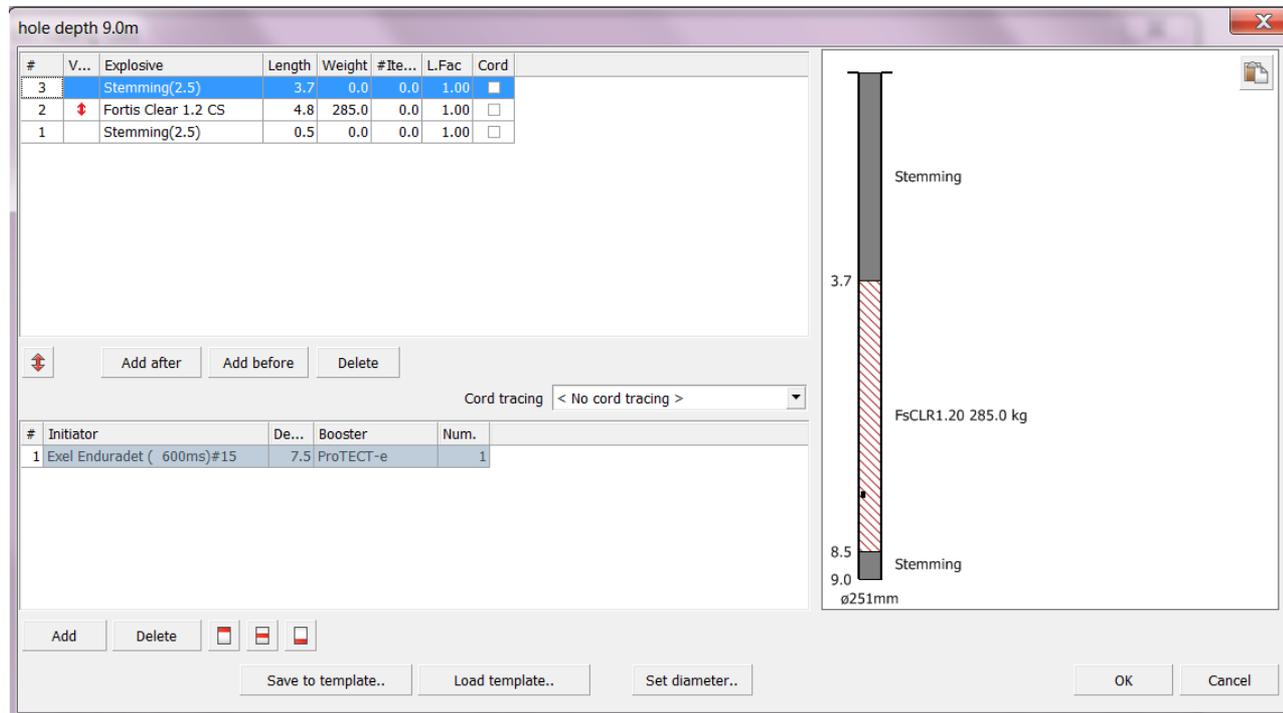
Save to template.. Load template.. Set diameter.. OK Cancel



# SAVING LOADING RULE TEMPLATES

A defined set of loading rules can be saved as a template for future use

1. Select **Save to file** to save a rules template
2. Select **Load file** to import a previously saved rules template



hole depth 9.0m

#	V...	Explosive	Length	Weight	#Ite...	L.Fac	Cord
3		Stemming(2.5)	3.7	0.0	0.0	1.00	<input checked="" type="checkbox"/>
2	↓	Fortis Clear 1.2 CS	4.8	285.0	0.0	1.00	<input type="checkbox"/>
1		Stemming(2.5)	0.5	0.0	0.0	1.00	<input type="checkbox"/>

Buttons: Add after, Add before, Delete

Cord tracing: < No cord tracing >

#	Initiator	De...	Booster	Num.
1	Exel Enduradet ( 600ms)#15	7.5	ProTECT-e	1

Buttons: Add, Delete

Buttons: Save to template.., Load template.., Set diameter.., OK, Cancel

Diagram labels: Stemming, 3.7, FsCLR1.20 285.0 kg, 8.5, 9.0, ø251mm

# TESTING LOADING RULE APPLICATION

To verify that you have correctly defined your conditions and the order of the rules

1. Use the **Test Rules** function. By changing hole parameters, you verify that the rules behave as expected

