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EXPLOSIVE STORAGE CAPACITY CALCULATING TOOL – USER MANUAL

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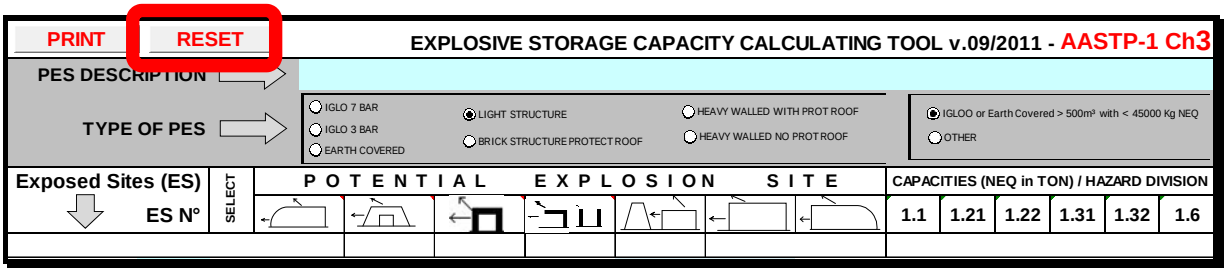
INTRODUCTION

This tool allows you to calculate storage capacities for all Hazard Divisions for an identified PES with respect of all AASTP-1 Change 3 QD-criteria. To calculate capacities, the distance between the PES and the ESs must be known. The tool will apply the appropriate criteria to calculate the storage capacity expressed in ton NEQ based upon the entered distance (in meter) and the chosen PES-ES relations.

It is essential that you allow the use of macros.

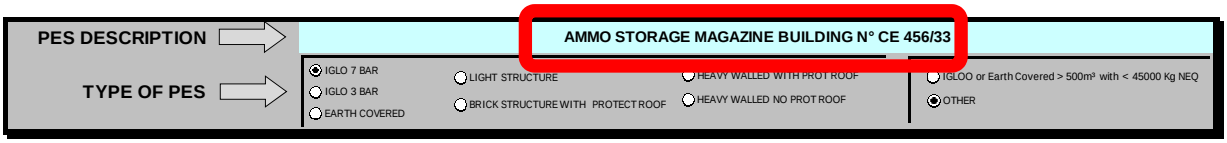
STEP 1 – Start with an empty sheet

Before you start using this tool make sure that no data from previous use of the tool is left in the data fields. To help you start with a blank sheet, there is a "RESET"-button on the top left corner of the sheet. Click this button and the tool will delete all data fields.

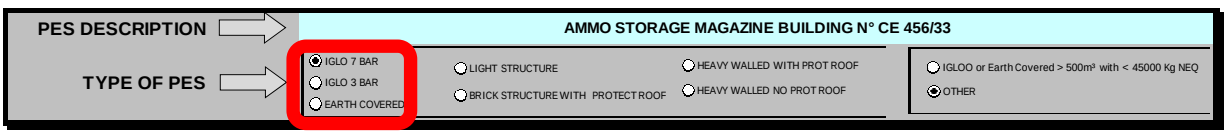


STEP 2 - Identify the PES

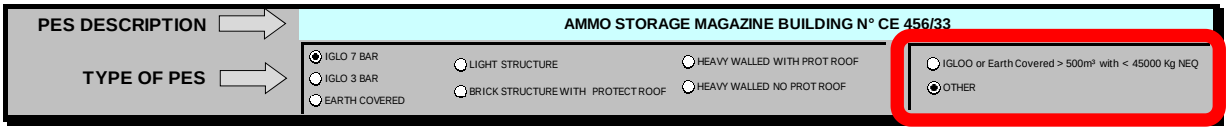
The field "PES DESCRIPTION" allows the user to describe the PES (free text field).



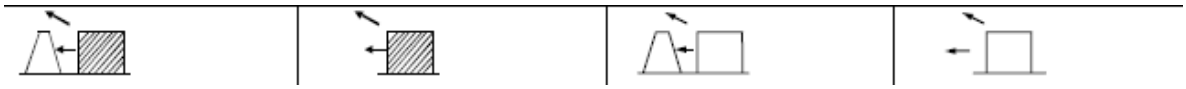
It is essential to identify the precise type of the PES. This choice determines the criterion that will be used to calculate the NEQ capacities. Make the correct choice of PES by clicking the appropriate radio button.



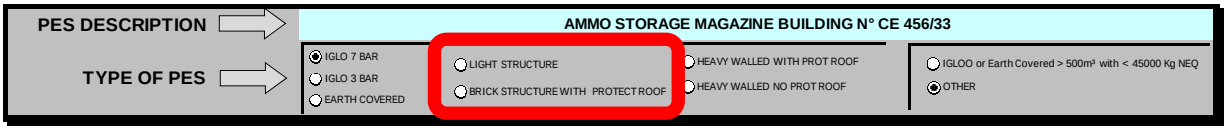
For earth covered magazines with a volume of more than 500m³ and a NEQ content of less than 45000kg, NEQ specific criteria apply. Therefore if the PES matches this description, then this must be identified by clicking the appropriate radio button.



The calculation tool does not show pictograms for buildings constructed with walls of 215 mm brick (or equivalent) and protective roof of 150 mm concrete with suitable support as they are shown in the AASTP-1 QD Tables.



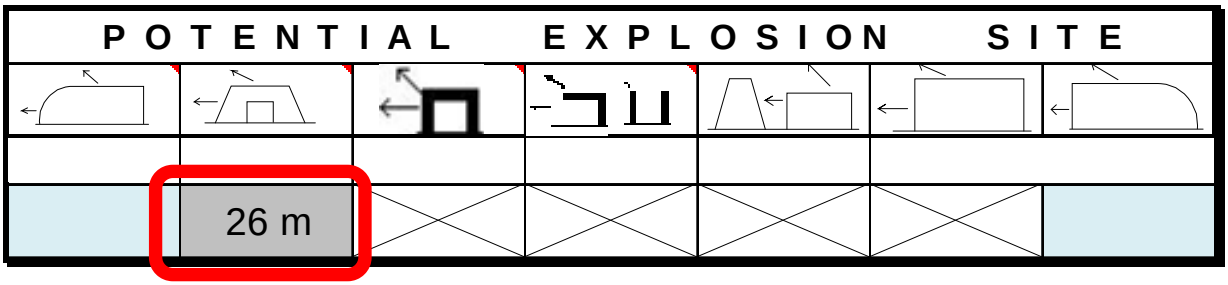
To make the distinction a choice must be made with the radio buttons :



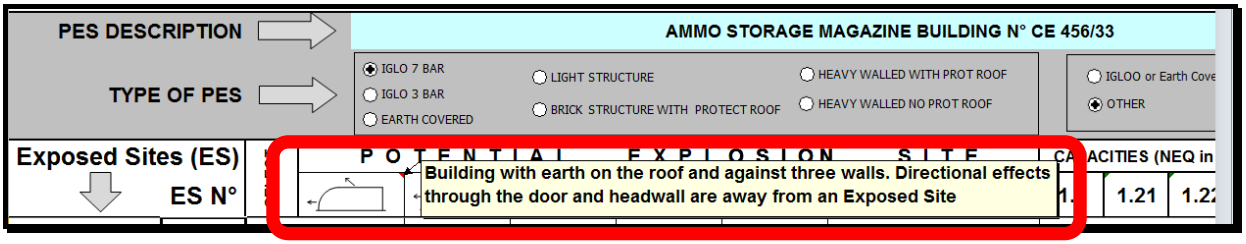
If necessary a window will pop up to ask for the type of ES.

Depending on your choice of PES, the non-applicable fields will be crossed out and the applicable fields will colorize “blue”. The crossed out fields will be blocked and the blue colorized fields can be edited. Simply enter the distance in numbers. Once the distance is filled in, the field will turn grey.

!!! It is important to **only enter one distance** into one single field per line!!!

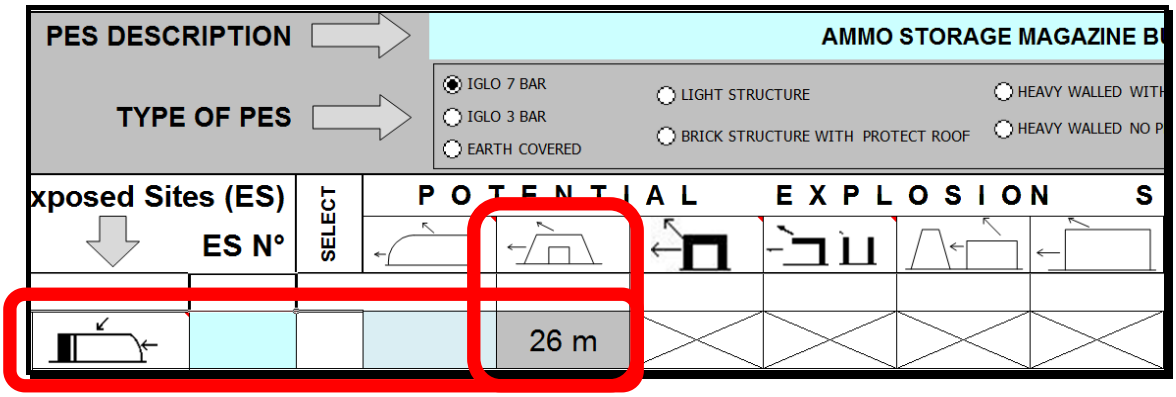


Hoover the mouse pointer over the red upper right corner of a cell and the description of the PES or ES structure will be shown.



STEP 3 - Identify the PES-ES-pairs and enter the distance

At the intersection of a chosen PES structure (column) and an ES (row), the user has to fill in the distance between these two structures as described in previous paragraph. The example below shows a PES (igloo 7 bar) and an ES (igloo 7 bar) in a "side to rear"-configuration with a distance between the two structures of 26m.



Repeat this step for every ES-type exposed from the PES.

Once the distance entered, the tool will automatically calculate the NEQ capacity for every ES-type per Hazard Division expressed in ton with a precision of 10 kg.

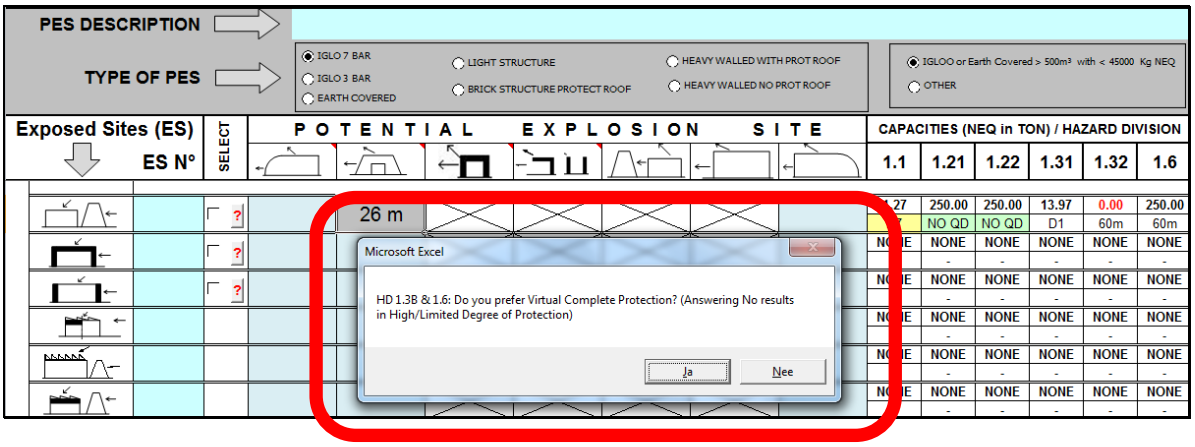
CAPACITIES (NEQ in TON) / HAZARD DIVISION					
1.1	1.21	1.22	1.31	1.32	1.6
140.61	250.00	250.00	250.00	250.00	250.00
D3	NO QD	NO QD	NO QD	NO QD	5m

For every Hazard Division, not only the NEQ capacity is calculated but the tool informs you as well about the used criterion. E.g. : HD 1.1 – 140.61 ton NEQ based upon the QD = D3. The QDs refer to the AASTP-1 QD-tables. If the applicable QD is a fix distance then this distance will be shown (see e.g. HD 1.6)

CAPACITIES (NEQ in TON) / HAZARD DIVISION					
1.1	1.21	1.22	1.31	1.32	1.6
140.61	250.00	250.00	250.00	250.00	250.00
D3	NO QD	NO QD	NO QD	NO QD	5m

For a number of PES-ES-pairs, more input is needed due to multiple possible QD's presented in the AASTP-1 tables. Whenever necessary, a pop-up window will ask for supplementary input.

When the user prefers to change his decision after answering the question in the pop-up window, the distance must be filled in again where after the pop-up window will appear again.

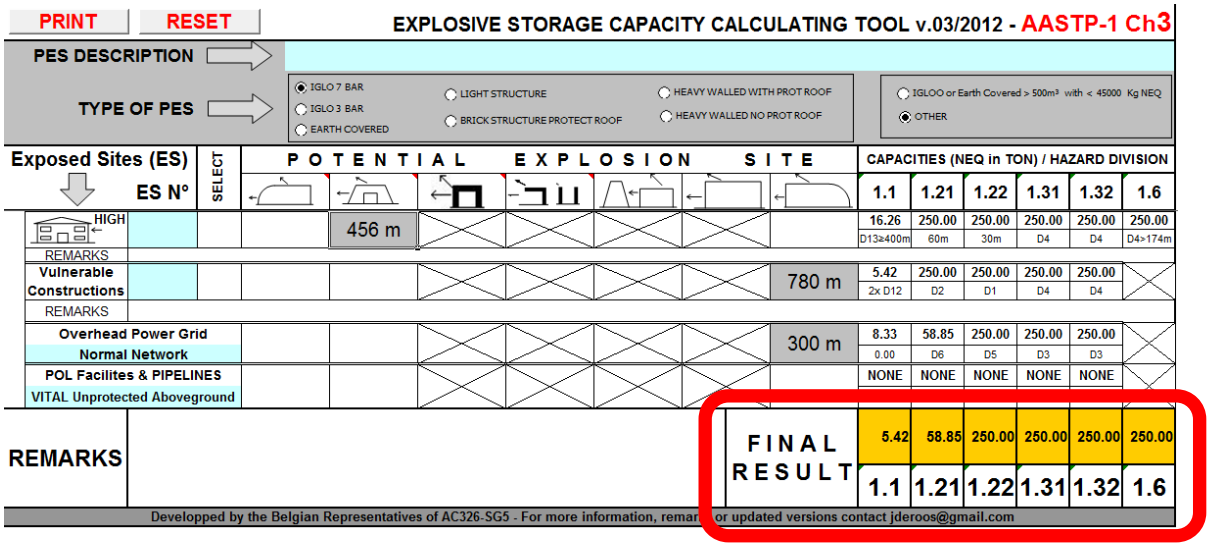


SPECIFIC EXPLOSIVE CONTENT INFLUENCING THE APPLICABLE QD's

For some ESs, the content may influence the applicable QD. Click on the button marked with the question mark to have detailed information when to flag the box on the right side of the ES pictogram.

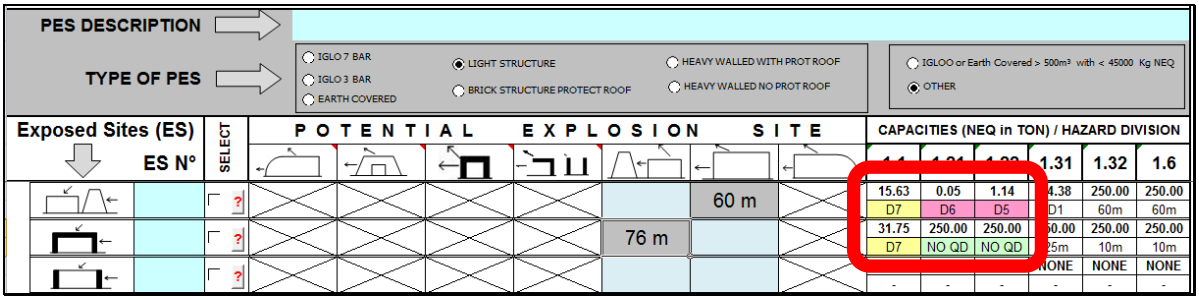
STEP 4 : READ THE RESULTS

At the bottom of this tool you will find the final result. Here you will find the capacity of the considered PES. The tool takes into account the smallest obtained capacities from all PES-ES pairs.



THE USE OF COLORS

If guidance is given in the AASTP-1 QD-tables, the obtained degree of protection is shown with colors. When the criterion is shown with a green background, the criterion offers virtual complete protection. A yellow background indicates a high level of protection, and red indicates a moderate and/or a limited degree of protection. If this information is not available in AASTP-1 the background colors are not used.

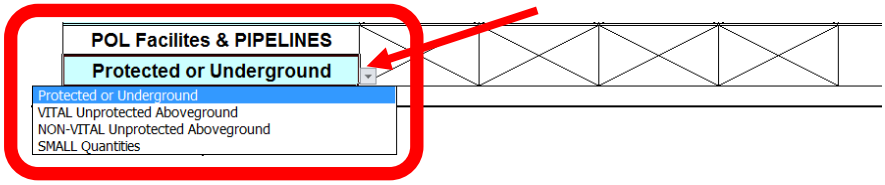


If the available distance results in no capacity, then the result (0.00) is shown in **red** fonts.

CAPACITIES (NEQ in TON) / HAZARD DIVISION					
1.1	1.21	1.22	1.31	1.32	1.6
0.00	250.00	250.00	0.00	250.00	0.00
D5	NO QD	NO QD	10m	NO QD	11m

POL FACILITIES AND PIPELINES & OVERHEAD POWER GRIDS

A drop down menu allows to indicate the nature of POL Facility:



The same drop down menu can be found for choosing the type of Overhead Power Grid.

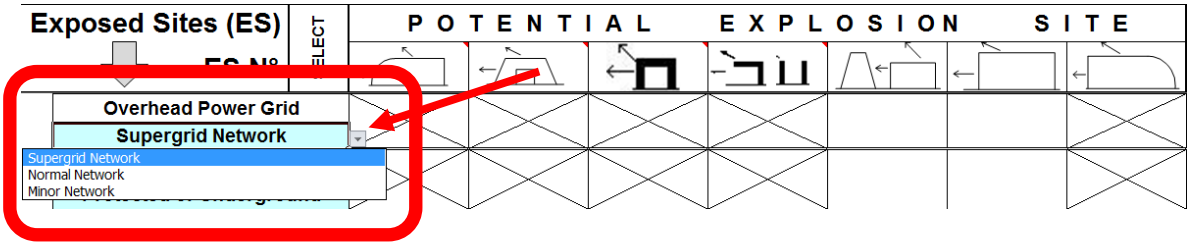


TABLE FOOTNOTES

When relevant, footnotes will appear in the remarks box.