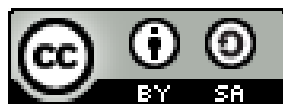




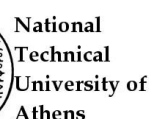
Task 02/A2

STRUCTURING THE MAIN 10 KEY SITUATIONS



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INTRODUCTION

One of the pillars on which the project was based was the creation of an interactive multimedia learning tool available to all workers in the stone sector, with the main objective of generating safe working environments for the use and application of nanomaterials to stone products. There is a wide lack of knowledge about the consequences of their use. The lack of information on the risks arising from the use of nanomaterials is mainly because the research and commercial development of these materials is moving much faster than the study of the health and safety problems they generate.

For this reason, it was necessary to develop a tool to raise awareness of the existing risks derived from the application and use of these nanocomposites, and to make available to the educational and professional community all the necessary training materials, as well as to take advantage of the different possibilities offered by new technologies as a means of dissemination and visualisation of the materials produced.

This report is included in the task *"O2-A2. Structuring the main 10 key risk situations"*, corresponding to Intellectual Output 2 *"Guideline of risks, health and environmental prevention measures in safe production and use of nanomaterials in Stone Sector"* of the NanoSafe project has been created.

After fixing all the key situations in the previous task, they have been structured in 10 sketches, each sketch representing a specific situation.

Due to the similarity of most of the risks in different situations this task has involved a lot of work to represent the selected risk situations and at the same time create pleasant scenes to make them attractive to use.

Besides raising awareness about the use of risk prevention measures and procedures in the use and application of nanomaterials in stone products, it has also been aimed to give precise information about the proper way to perform the most common tasks related to the treatment of nanocomposites in the stone industry.

The report and all the information about the project are available in the following url:

- NanoSafe project web: <https://www.nanosafeproject.eu/>



TASK 02/A2. STRUCTURING THE MAIN 10 KEY SITUATIONS.

KEY SITUATIONS

SITUATION 1. CUTTING STONES TO SIZE AT CONSTRUCTION SITE	
SITE:	Construction site
MATERIAL:	Stone
APPLICATION:	Not applicable
PRODUCT:	It may have a protective treatment or be the stone's own nanoparticles with the same composition as the stone
ASOCIATED RISKS:	Cuts Inhalation of dust Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Confinement - Screening of work areas - Suction systems - Wet cutting - Tools with systems for powder elimination/extraction Individual: <ul style="list-style-type: none"> - Full face mask or half mask and close-fitting safety glasses - Gloves - Work coverall

SITUATION 2. APPLICATION DEPENDING ON THE NANOPRODUCT AT FACTORY	
SITE:	Factory
MATERIAL:	Not applicable
APPLICATION:	Any application
PRODUCT:	Any nanoproduct
ASOCIATED RISKS:	Skin and eye contact Inhalation and genotoxic effects Inflammatory effect in the lung Progressive fibrosis
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Application in areas with a good ventilation Individual: <ul style="list-style-type: none"> - Full face mask or half mask and close-fitting safety glasses - Gloves - Work coverall



TASK 02/A2. STRUCTURING THE MAIN 10 KEY SITUATIONS.

SITUATION 3. POURING OF NANOMATERIAL POWDER INTO A LIQUID MATRIX TO CREATE A MIXTURE	
SITE:	Construction site
MATERIAL:	Mortar
APPLICATION:	Add the powder into a liquid matrix
PRODUCT:	Powder nanomaterial with a property that improves the quality of the mortar
ASOCIATED RISKS:	Respiratory hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Suction systems - Confinement Individual: <ul style="list-style-type: none"> - Gloves - Full face mask or half mask and close-fitting safety glasses - Coverall

SITUATION 4. LIQUID NANOMATERIAL APPLIED WITH A SPRAY-GUN ON A STONE MATERIAL SURFACE	
SITE:	Construction site
MATERIAL:	Stone
APPLICATION:	With a spray gun
PRODUCT:	Consolidant and water repellent
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Confinement Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses



TASK 02/A2. STRUCTURING THE MAIN 10 KEY SITUATIONS.

SITUATION 5. NANOMATERIAL FIXED IN A SOLID MATRIX WHICH IS BEING DRILLED	
SITE:	Construction site
MATERIAL:	Stone
APPLICATION:	Not applicable
PRODUCT:	Water repellent coating
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Suction systems - Confinement - Tools with systems for powder elimination/extraction - Wet work Individual: <ul style="list-style-type: none"> - Gloves - Full face mask or half mask and close-fitting safety glasses - Coverall

SITUATION 6. NANOMATERIAL IN LIQUID MATRIX APPLIED WITH PAINT ROLLER	
SITE:	Factory
MATERIAL:	Worktop stone
APPLICATION:	With paint roller
PRODUCT:	Anti-stain coating
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Confinement Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses



TASK 02/A2. STRUCTURING THE MAIN 10 KEY SITUATIONS.

SITUATION 7. DUST-AIR MIXTURES IN A FACTORY	
SITE:	Factory
MATERIAL:	Ground stone
APPLICATION:	With a spray gun- aerosol or other similar
PRODUCT:	Any nanoproduct
ASOCIATED RISKS:	Fire and explosion Respiratory hazard
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Good ventilation Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses

SITUATION 8. NANO-WASTE MANAGEMENT ENVIRONMENTAL PROTECTION	
SITE:	Factory
MATERIAL:	Not applicable
APPLICATION:	Not applicable
PRODUCT:	Any
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Depuration systems - Suction systems Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses



TASK 02/A2. STRUCTURING THE MAIN 10 KEY SITUATIONS.

SITUATION 9. NANOMATERIAL APPLIED AS AN AEROSOL	
SITE:	Construction site
MATERIAL:	Pool stone
APPLICATION:	As an aerosol
PRODUCT:	Non-slip coating
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Confinement Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses

SITUATION 10. WASTE CLEANING OR DISPOSAL AFTER WORKING HOURS	
SITE:	Factory
MATERIAL:	All the facilities
APPLICATION:	Not applicable
PRODUCT:	Any nanoproduct
ASOCIATED RISKS:	Respiratory hazard Ingestion hazard Skin and eye contact
EQUIPMENT:	Collective: <ul style="list-style-type: none"> - Extraction systems - Suction systems - Confinement Individual: <ul style="list-style-type: none"> - Gloves - Coverall - Full face mask or half mask and close-fitting safety glasses