igamaot
Inspeção-Geral da Agricultura, do Mar, do Ambiente e do Ordenamento do Território

ENFORCEMENT STRATEGIES ON LOWER TIER SITES
BRING IT ON BOARD AND NEW IN

ANDREA SANTOS, INSPECTOR

MIGUEL SANTOS, INSPECTOR

MJV LISBON, OCTOBER 2023

Legal framework

SEVESO I Directive (82/501/CEE, 87/216/CEE, 88/610/CEE) → Decree- Law 224/87, Decree-Law 204/93

SEVESO II Directive (96/82/CE, 2003/105/CE → Decree- Law 164/2001, Decree-Law 254/2007

SEVESO III Directive (2012/18/UE) → Decree- Law 150/2015

Seveso inspection system

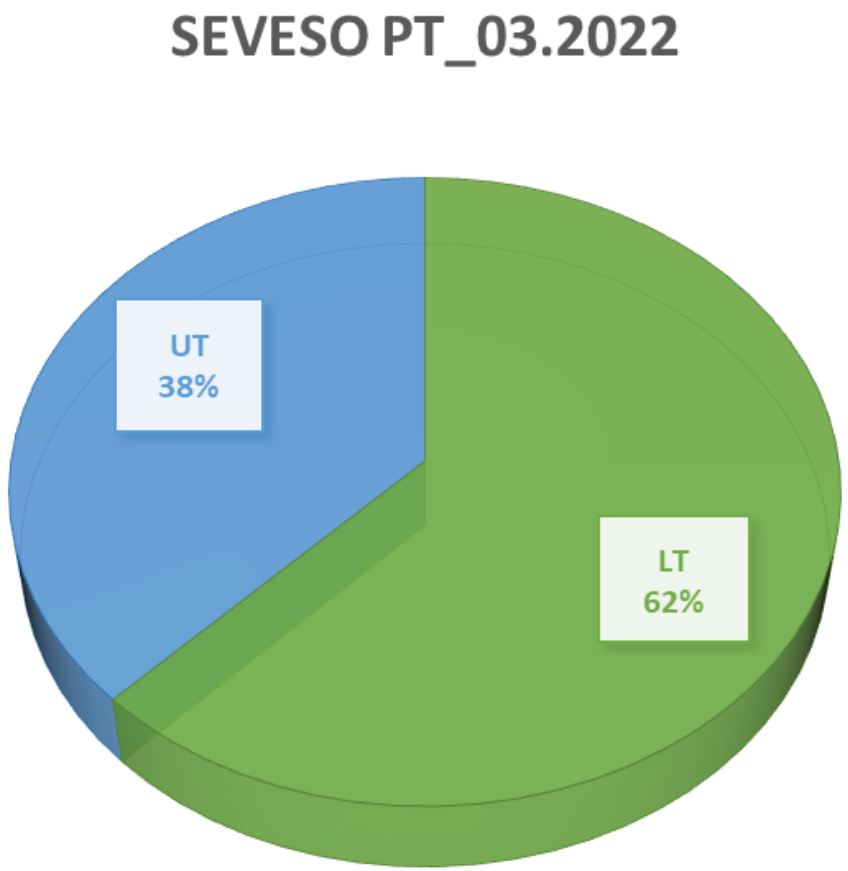
- IGAMAOT has drawn up an **inspection program based on a systematic appraisal of major-accident hazards** of the establishments concerned.

- The period between two consecutive site visits shall not exceed **five years for low-risk lower tier establishments** and **three years for low-risk upper tier establishments. For high-risk establishments** the interval between two visits is **no longer than one year.**

- Whenever possible, inspections are coordinated with inspections carried out by strength of other applicable and combined legal regimes.

Lower tier sites in Portugal

- 62 % of Portuguese Seveso sites are lower tier (LT);
- “New in” sites are challenging, especially the atypical (non-chemical) ones with lack of seveso culture;
- “Bring it on board” is a continously work even when inspections are carried out by strength of other applicable legal regimes (e.g. IED/IPPC, REACH/CLP).



Bring it on board

- Identify establishments that are not registered as being covered by Seveso, but which, depending on the activity carried out or of their storage capacities, may be close to reaching the threshold quantities set out in the Directive.
- "Guide to checking coverage by Decree-Law 150/2015", Portuguese Environment Agency, 2015.

Guia_enquadramento_PAG_DL150_2015.pdf (apambiente.pt)

- Notification form

FormularioComunicacaoV2.xlsx (live.com)

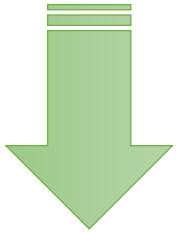
igamaot
Inspeção-Geral da Agricultura, do Mar, do Ambiente e do Ordenamento do Território

Bring it on board

The **methodology for verification of Seveso coverage *in situ*** comprises the following steps:

- ✓ Identification of all dangerous substances present in the establishment (*in situ*);
- ✓ Maximum quantities of dangerous substances, in mass, capable of being find at any time in the establishment;
- ✓ Classification of dangerous substances under Regulation (EC) 1272/2008, of the European Parliament and of the Council, of 16 December (CLP) and proof of this classification (safety data sheets, technical analysis if available);

- ✓ Pre-filling the notification form (by operator/inspectors);
- ✓ Check data consistency (in the office).



New Seveso establishment?

Directive 2012/18/EU

Bring it on board | Case 1 – Wood treatment

Wood treatment plant (Montijo) – inspected in June 2023 (risk-based assessment)

Typical timber sawmill producing wood chips & pellets, wood poles, wood furniture

- **Wood chips and pellets**

used as solid fuel in home heating or power/heat generation in industrial plants

- **Wood poles and wood furniture**

Poles: Outdoor fencing in farms, power and telecommunication networks
Furniture: Outdoor home garden decks, playground structures, urban furniture such as benches, tables, cabins, etc.

Wood treatment

Since all the wood poles and furniture manufactured in this plant are for outdoor use, the wood itself need to be chemically pretreated to allow future preservation when subjected to rough weather or bioattack.

+

Establishment current wood preservation production capacity : 448 cubic meter/ day

=

IED Annex I activity

6.10. Preservation of wood and wood products with chemicals with a production capacity exceeding 75 cubic meter per day other than exclusively treating against sapstain

Wood treatment

Establishment applied for IED permit granting and it is currently being reviewed by the Portuguese competent authority (Agência Portuguesa do Ambiente – Portuguese Environment Agency)

apa agência portuguesa do ambiente

What do we know so far?

IED Annex I activity (6.10)

IED Chapter V (Organic solvents)

?

But… not found within scope!

Seveso III Directive

?

Wood treatment

Wood preservation with chemicals:

"Where the natural protective constituents are insufficient or totally absent, wood and wood products are treated with preservatives to protect them from the damaging effects of fungi, bacteria, insects, water, weather or fire; providing long-term conservation of structural integrity and improving the resistance." **(BAT Reference Document on Surface Treatment Using Organic Solvents including Preservation of Wood and Wood Products with Chemicals – 2020) – BREF STS**

- ✓ **Organic Biocides**
- ✓ **Copper salts**
- ✓ **Polycyclic aromatic hydrocarbons – PAH (creosote)**
- ✓ **Organic solvents**

→ **Hazardous substances and mixtures**
CLP Regulation (EC) n.º 1272/2008

Hazard categories – Section H, P, E and O

relevant to the Directive on the **control of major-accident hazards (Seveso III)**

Wood treatment

So, what we found on-site?

- ✓ **Establishment performs wood preservation using two mixtures (ordered and purchased to a external manufacturer) and a substance.**
  - **Mixture "A" (pure)**

  - Hazard category section E (E1 Hazardous to the Aquatic Environment - Chronic 1)
  - **Mixture "B" (pure)**

  - Hazard category section E (E1 Hazardous to the Aquatic Environment - Chronic 1)
  - **Water (plain)**

- ✓ **They blend (in-house) these two mixtures with water to make up the preservation mixture actually used during the wood treatment in vessels and autoclaves**
  - **Wood treatment mixture (6% Mixture "A"; 0,05% Mixture "B"; 93,95% water v/v)**

  - Hazard category section E (E2 Hazardous to the Aquatic Environment - Chronic 2)

Wood treatment

So, what we found on-site?

- ✓ **They store these mixtures in multiple fixed vessels but also in intermediate bulk containers (IBC)**
  - **Mixture "A" - 2 vessels (37,7 and 35,5 cubic meter each)**
  - **Mixture "B" – 2 IBC**
  - **Wood treatment mixture – 2 intermediate buffer vessels (67,35 and 49,0 cubic meter each)**

  but also…

  - **Wood treatment mixture – 2 autoclaves (53,0 and 45,9 cubic meter each)**

  and…!

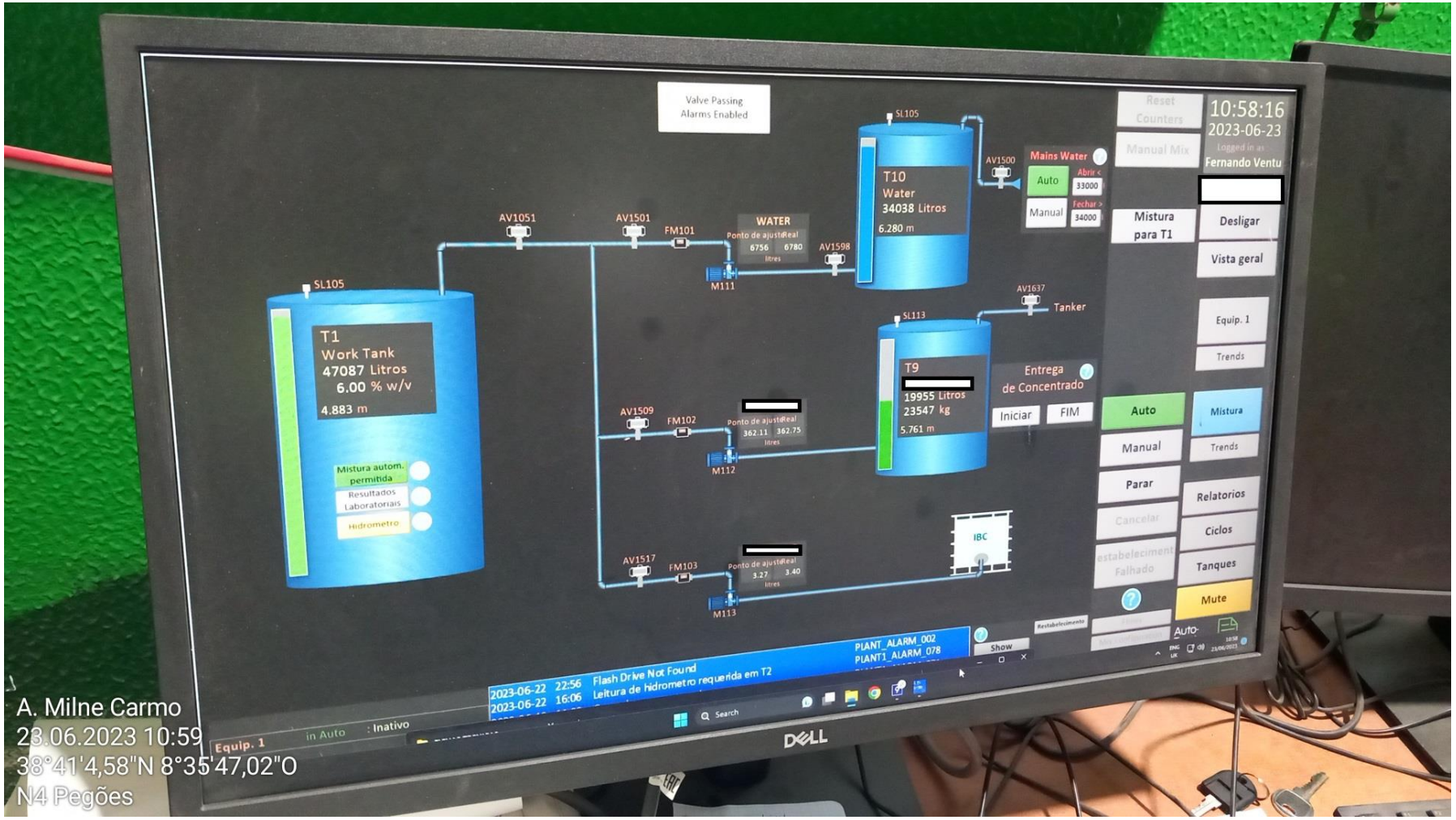
- ✓ **They also store diesel fuel in 2 vessels (9,9 and 2,0 cubic meter each)**

Wood treatment

Some photos taken on-site

Wood treatment

On-site process automation



But, is this establishment within Seveso III scope?

AGÊNCIA PORTUGUESA DO AMBIENTE

FORMULÁRIO DE COMUNICAÇÃO

Regime de Prevenção de Acidentes Graves (Decreto-Lei n.º 150/2015, de 5 de agosto)

III. Inventário de substâncias perigosas do estabelecimento

Enquadramento do estabelecimento: **nível inferior**

Resultados da regra da adição (se aplicável):

	limiar inferior	limiar superior
Σ q/Q (Categorias da Secção H)	0,000	0,000
Σ q/Q (Categorias da Secção P)	0,004	0,000
Σ q/Q (Categorias da Secção E)	1,833	0,820

Notas:
- Tem de selecionar pelo menos uma categoria de perigo para cada substância, incluindo para as substâncias designadas.
- Nas situações em que não é necessário aplicar a regra da adição, nomeadamente quando o enquadramento é direto, não são apresentados os resultados da regra da adição.

						Categoria(s) de perigo aplicáveis				Quantidade-limiar da coluna 2 (Qinf) (tonelada)				Quantidade-limiar da coluna 3 (Qsup) (tonelada)				Regra da adição					
Identificação	Estado físico	Tipo de armazenagem	Quantidade máxima (q) (tonelada)	Substância designada	Classificação	Secção H	Secção P	Secção E	Secção O	Qinf Secção H	Qinf Secção P	Qinf Secção E	Qinf Secção O	Qsup Secção H	Qsup Secção P	Qsup Secção E	Qsup Secção O	q/Qinf Secção H	q/Qinf Secção P	q/Qinf Secção E	q/Qsup Secção H	q/Qsup Secção P	q/Qsup Secção E
A	Líquido	Reservatório atmosférico	86,14	não	Aquatic Chronic 1, H410			E1		-	-	100	-	-	-	200	-	-	-	0,861	-	-	0,431
B	Líquido	Embalagens	2,12	não	Aquatic Chronic 1, H410			E1		-	-	100	-	-	-	200	-	-	-	0,021	-	-	0,011
Gasóleo (agrícola e rodoviário)	Líquido	Reservatório atmosférico	9,9603	34. c) Produtos petrolíferos e combustíveis alternativos - Gasóleos (incluindo combustíveis para motores diesel, fuelóleos domésticos e gasóleos de mistura)	Flam. Liq. 3, H226; Aquatic Chronic 2, H411		P5c	E2		-	2500	2500	-	-	25000	25000	-	-	0,004	0,004	-	0,000	0,000
Solução impregnante (autoclaves)	Líquido	Reservatório atmosférico	71,667847	não	Aquatic Chronic 2, H411			E2		-	-	200	-	-	-	500	-	-	-	0,358	-	-	0,143
Solução impregnante (reservatórios ST.1 e ST.2)	Líquido	Reservatório atmosférico	117,6100705	não	Aquatic Chronic 2, H411			E2		-	-	200	-	-	-	500	-	-	-	0,588	-	-	0,235

Wood treatment

In detail…

Physical form (liquid)

Max quantity (t)

Named substance

Hazard category

Identificação	Estado físico	Tipo de armazenagem	Quantidade máxima (q) (tonelada)	Substância designada	Classificação	Categoria(s) de perigo aplicáveis			
						Secção H	Secção P	Secção E	Secção O
A **Mixture A**	Líquido	Reservatório atmosférico	86,14	não	Aquatic Chronic 1, H410			E1	
B **Mixture B**	Líquido	Embalagens	2,12	não	Aquatic Chronic 1, H410			E1	
Diesel fuel Gasóleo (agrícola e rodoviário)	Líquido	Reservatório atmosférico	9,9603	34. c) Produtos petrolíferos e combustíveis alternativos - Gasóleos (incluindo combustíveis para motores diesel, fuelóleos domésticos e gasóleos de mistura)	Flam. Liq. 3, H226; Aquatic Chronic 2, H411		P5c	E2	
Treatment mixture (autoclaves) Solução impregnante (autoclaves)	Líquido	Reservatório atmosférico	71,667847	não	Aquatic Chronic 2, H411			E2	
Treatment mixture (int. vessels) Solução impregnante (reservatórios ST.1 e ST.2)	Líquido	Reservatório atmosférico	117,6100705	não	Aquatic Chronic 2, H411			E2	

Net quantity (vessel volume – wood volume)

In detail…

No individual dangerous substance was found to be present in a quantity above or equal to the relevant upper-tier requirements, so **Seveso III Annex I – point n.º 4 rule of sum must be applied**:

		Categoria(s) de perigo aplicáveis				Regra da adição					
Identificação	Classificação	Secção H	Secção P	Secção E	Secção O	q/Qinf Secção H	q/Qinf Secção P	q/Qinf Secção E	q/Qsup Secção H	q/Qsup Secção P	q/Qsup Secção E
A	Aquatic Chronic 1, H410			E1		-	-	0,861	-	-	0,431
B	Aquatic Chronic 1, H410			E1		-	-	0,021	-	-	0,011
Gasóleo (agrícola e rodoviário)	Flam. Liq. 3, H226; Aquatic Chronic 2, H411		P5c	E2		-	0,004	0,004	-	0,000	0,000
Solução impregnante (autoclaves)	Aquatic Chronic 2, H411			E2		-	-	0,358	-	-	0,143
Solução impregnante (reservatórios ST.1 e ST.2)	Aquatic Chronic 2, H411			E2		-	-	0,588	-	-	0,235

Wood treatment

In detail…

Which in turn, determines that this establishment is in in fact a **lower-tier establishment**

Enquadramento do estabelecimento:	nível inferior

Resultados da regra da adição (se aplicável):

	limiar inferior	limiar superior
Σ q/Q (Categorias da Secção H)	0,000	0,000
Σ q/Q (Categorias da Secção P)	0,004	0,000
Σ q/Q (Categorias da Secção E)	1,833	0,820

Greater than 1 – Rule Annex I – n.º 4 **Lower-tier** **Upper-tier**

Final thoughts…

- Although the nature of wood preservatives might not be seen as hazardous to the untrained eye, we did not came across this conclusion even when considering a 93% dilution with just plain water, as we have just seen!

- As such, the operator was **completely oblivious** to the fact that Seveso III applied to his existing establishment, so **no** general obligations were fulfilled or implemented on-site, such as notification, major-accident prevention policy (MAPP) or emergency plans.

- A subsequent prosecution case set by these environmental law breaches will be carried out by IGAMAOT, following the inspection carried on-site. Our experience tells that when possible, it is useful to add **commercial** (purchasing - substance/mixture invoices) or **fiscal** (inventory records) documents collected on-site and representing a defined time period (last year), to demonstrate effective storage of these substances in the establishment, when it comes to on Court proceedings (sentencing).

- We are proud that environmental permitting procedures in Portugal adopt an “holistic” approach, bringing together multidisciplinary competent authorities into the decision-making process, but still, there is some room for improvement, making sure that the information submitted by the operator and gathered by the authorities while permit granting is still being evaluated, is in fact **technically sound and accurate**.

igamaot
Inspeção-Geral da Agricultura, do Mar, do Ambiente e do Ordenamento do Território

Bring it on board
Case 2 - Manufacturing and storage of pyrotechnic products

In 2023, several inspection actions were done to address Seveso compliance levels on manufacturing and storage of pyrotechnic products establishments.

- Establishments selection -

Establishments are selected based on the **following criteria**:

- ✓ Search for permits published online diariodarepublica.pt/dr/home ;
- ✓ Take into account complaints and reports in this context;
- ✓ Take into account information transmitted to us from other Seveso competent authorities (APA, ANEPC);

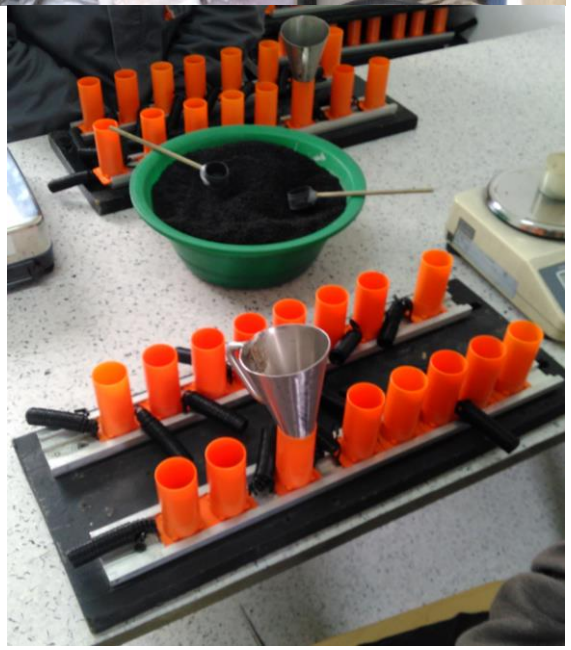
Manufacturing and storage of pyrotechnic products

- ✓ Cross-check permits list with internal databases;
- ✓ Cross-check with the list of establishments that notified the Portuguese Environment Agency (APA);
- ✓ Determine the anticipated presence of dangerous substances in the establishment based on the provisions of the permits (raw materials to be used in the manufacture, stored explosives, others);
- ✓ If near lower-tier thresholds or above and without notification, selected for inspection *in situ*.

Manufacturing and storage of pyrotechnic products

- Some findings -

- Most sites are self-owned companies;
- There is a lack of awareness about the Seveso Directive;
- Contract third parties to deal with Seveso legal requirements compliance and receive substandard advises from those companies;
- “custom-made” notifications to be below Seveso LT/UT thresholds.



Manufacturing and storage of pyrotechnic products

- Some results -

- Permit's analysis revealed an establishment that is Seveso but didn't notify the competent authority.
- In these cases, usually the storage of dangerous substances like pyrotechnic fireworks from risk division 1.1, 1.3 and 1.4 [hazard category P1a and P1b Explosives], potassium perchlorate and nitrates (K, Na, Ba) [hazard category P8 Oxidising Liquids and Solids], dictated their inclusion in Seveso regime.
- Lack of prevention instruments like major-accident prevention policy or emergency plans.
- In some cases, establishments had internal emergency plans, however they did not follow the guidelines issued by the Seveso competent authorities.

Manufacturing and storage of pyrotechnic products

- Conclusions -

- In the cases where **no general obligations were fulfilled or implemented on-site**, such as notification, major-accident prevention policy or emergency plans, **penalties were applied** considering the operator didn't take all necessary measures to prevent major accidents and to limit their consequences for human health and the environment.

Bring it on board
Other attempts and some considerations

Chemical warehouses

- ✓ Characterized by storing a wide variety of chemical products;
- ✓ Show inadequate control of SDS and its compliance;
- ✓ Inventory management are carried out without taking into account if products are covered by Seveso.

Bring it on board
Other attempts and some considerations

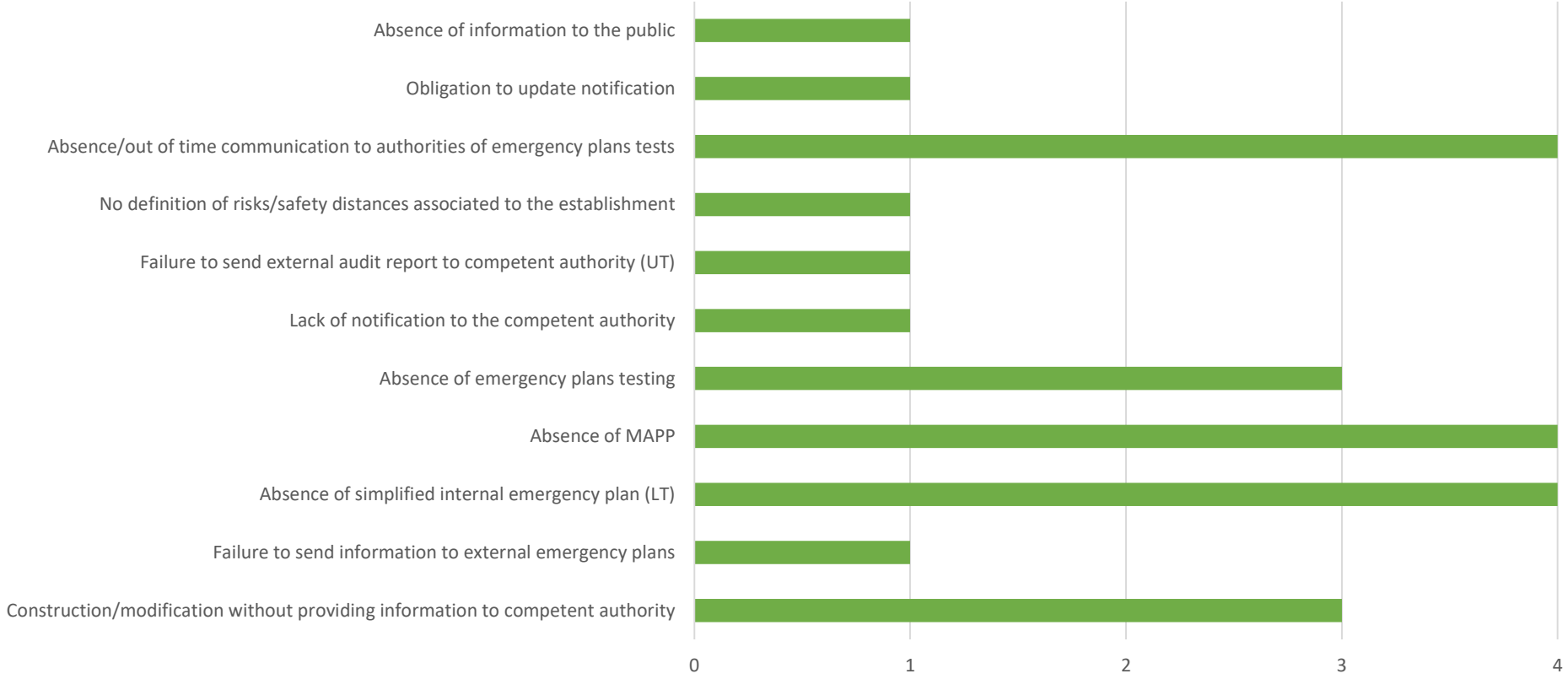
Foundry

- ✓ They can produce a residue classified with the code LER 12 01 04 Dust and particles of non-ferrous metals;
- ✓ Need to verify if it applies CLP classification H250 and SEVESO [hazard category P7 Pyrophoric solids, category 1];
- ✓ The operator should carry out analyzes and be able to prove that the residue is not pyrophoric according to CLP.

New In Seveso sites | Identified critical aspects

In the last 4 years, 24 administrative penalties were attributed to **new Seveso establishments (never inspected)**, developing diverse activities such as lime production, public transportation, chemical warehouses and manufacturing/storage of pyrotechnic products.

The penalties were distributed as follows in the graphic below.



igamaot
Inspeção-Geral da Agricultura, do Mar, do Ambiente e do Ordenamento do Território

Thank you for your attention!

asantos@igamaot.gov.pt

masantos@igamaot.gov.pt

IGAMAOT
Rua de “O Século”, nº 51, 1200-433 Lisboa
Phone number: 213 215 500
igamaot@igamaot.gov.pt