THE EU PROTOCOL FOR THE MANAGEMENT OF C&D WASTES
CIRCULAR ECONOMY APPLIED TO THE BUILDING SECTOR

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THE PROTOCOL AND THE WORKING GROUP

- Developed by: European Commission, European Associations of different industrial sectors, national Public Administrations
- The work that has been carried out from 6/15 to 9/16
- 50 industrial experts, 15 MS, 2 task forces
  - TF1 “Task Force 1 on Quality Recycling, Building Confidence”
  - TF2 “Setting conducive policy and framework conditions”
- With the contribution of the building Department of the Joint Research Center in Sevilla (SP)
- Download: http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8983

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AIM OF THE PROTOCOL

- The overall aim of the Protocol is to increase confidence in the C&D waste management process and the trust in the quality of C&D recycled materials
- When the Protocol is applied the circular economy is put in practice
- This will be achieved by:

a) Improved waste identification, source separation and collection;
b) Improved waste logistics;
c) Improved waste processing;
d) Quality management;
e) Appropriate policy and framework conditions.

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WIDER BENEFITS OF THE PROTOCOL

- Increased demand for C&D recycled materials;
- The promotion of (new) business activities and players in the waste infrastructure sector;
- Increased cooperation along the C&D waste value chain;
- Progress towards meeting C&D waste targets;
- Progress towards harmonised EU markets for C&D recycled materials (where appropriate);
- The generation of reliable C&D waste statistics across the EU;
- Reduced environmental impacts and contribution to resource efficiency.

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TARGET GROUPS OF STAKEHOLDERS

- Industry practitioners; construction sector (including renovation companies and demolition contractors), construction product manufacturers, waste treatment, transport and logistics as well as recycling companies;
- Public authorities at local, regional, national and EU levels;
- Quality certification bodies for buildings and infrastructure;
- Clients of C&D recycled materials.

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STRUCTURE OF THE PROTOCOL

- The Protocol consists of 5 **components**, all of which contribute to the overall aim. The first three are based on the C&D waste management chain and two are of a horizontal nature:
  - Waste identification, source separation and collection;
  - Waste logistics;
  - Waste processing;
  - Quality management;
  - Policy and framework conditions.
- Fig. 2 visualises a general flow of C&D waste processing and its relation to the policy and framework conditions. The chart can be specified depending on the C&D material and situation.

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WASTE IDENTIFICATION, SOURCE SEPARATION AND COLLECTION

- Improved waste identification, separation and collection at source are at the start of the C&D waste management process.
- Improved waste identification requires clear and unambiguous definitions; it also requires good-quality pre-demolition audits and waste management plans to be prepared and executed
- A crucial part of the source separation is the elimination of hazardous waste, as well as the separation of materials that hamper recycling, including fixation materials
- Improved collection of goods for re-use and recycling requires selective demolition and appropriate on-site operations as well

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WASTE LOGISTICS

- Transparency needs to be assured throughout all phases of the C&D waste management process
- Try to keep distances short
- Where possible, use waste transfer stations (or collecting boxes)
- Re-use, recycling and recovery of C&D materials requires proper stocking
- C&D waste stockpiling can cause various emissions and risks (like pollution of water, leaching or run-off of contaminants and particulates; heat generation with potential to cause fire; generation of litter; dust, biogas and odour emissions etc.).
- For example, the waste should be segregated and disposed in separate dedicated containers

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WASTE PROCESSING AND TREATMENT (1)

- A wide range of waste processing and treatment options exist: following the waste hierarchy offers wide-reaching benefits in terms of resource efficiency, sustainability and cost savings (preparation for re-use, recycling and material and energy recovery – in that order of priority)
- Preparing for re-use is to be promoted as it involves application with little or no processing. In theory, re-use offers even greater environmental advantages than recycling since environmental impacts associated with reprocessing do not arise
- However, in practice this may not be easy always

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WASTE PROCESSING AND TREATMENT (2)

- Materials can either be recycled on-site into new construction resources or off-site at a recycling plant
- C&D waste recycling needs to be promoted particularly in densely populated areas, where supply and demand are geographically close, resulting in shorter transport distances than for the supply of primary materials, such as in the case of aggregates

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QUALITY MANAGEMENT AND ASSURANCE (1)

- Quality management is a crucial step towards increasing the confidence in the C&D waste management processes and the trust in the quality of C&D recycled materials
- The qualitative value of recycled construction materials is based on their environmental features and on their technical performance
- Appropriate quality management procedures and protocols allow suppliers to control and secure their processes and the quality of products

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QUALITY MANAGEMENT AND ASSURANCE (2)

- There is a need to promote quality assurance of the primary processes (from demolition site to waste logistics and waste processing) (section 5.1), as well the provision of reliable and accurate information about the performance of the recycled or re-used products (section 5.2).
- To further develop the market for recycled construction materials, the traceability and tracking of waste flows is essential
- Tracking and tracing procedures (Chapter 3), can help to build trust in secondary construction materials and can be considered as an essential part of quality management

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QUALITY MANAGEMENT AND ASSURANCE (3)

- Environmentally sound application of recycled aggregates can be secured by introducing quality management checks and tools at all stages of the recycling process:
  1) at demolition sites;
  2) during waste transportation and transfer;
  3) at C&D waste recycling sites (see Table 1).
- For all these stages good documentation and adequate traceability procedures should be put in place
- Make use of existing general quality management schemes such as ISO 9000, and environmental management systems such as ISO 14001 and EMAS

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POLICY AND FRAMEWORK CONDITIONS (1)

- Successful C&D waste management can only take place if the appropriate policy and framework conditions are in place
- To achieve this, a dialogue between public and private actors in the field of C&D waste management is of the greatest importance
- Key areas for public action are:
  - An appropriate regulatory framework
  - Enforcement
  - Right public procurement and incentives
  - Awareness, public perception, and acceptance

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POLICY AND FRAMEWORK CONDITIONS (2)

- Local government needs to manage complaints about illegal dumping actively. This includes thorough investigations and follow-up of any such reporting
- Proportional sanctions for illegal activities need to be imposed, wherever they occur along the value chain of C&D waste (from illegal landfilling through waste dumping)
- They need to be set at high levels to act as deterrents, especially when hazardous waste is concerned

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POLICY AND FRAMEWORK CONDITIONS (3)

- During waste identification, collection and sorting, regulatory measures need to cover the necessity of conducting a pollutant investigation in the form of a pre-demolition audit or a waste management plan, before the demolition takes place, and promote waste flow separation
- Throughout the waste management cycle, monitoring is crucial
- It is essential that all authorities have the necessary documentation
- This creates transparency and trust in the C&D waste management process

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PUBLIC PROCUREMENT (1)

- Authorities at all levels can provide incentives for promoting the use of C&D recycled materials
- The EC has identified the construction sector as a priority sector for green public procurement for a long time already
- It focuses on public expenditure; potential impact on the supply side; example setting for private or corporate consumers; political sensitivity; existence of relevant and easy-to-use criteria; market availability and economic efficiency

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PUBLIC PROCUREMENT (2)

- Green Public Procurement criteria have been published for use in office buildings and road construction
- These guidelines take a lifecycle approach that addresses not only the use of recycled materials, but also the ability to design buildings for disassembly - enabling high rates of re-use and recycling at the end-of-life

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ANNEX D – BEST PRACTICE EXAMPLES

- It is one of the most interesting part of the Protocol
- Best practices are presented
- They are divided into:
  - Waste identification, source separation and collection;
  - Waste logistics;
  - Waste processing;
  - Quality management;
  - Policy and framework conditions.
- Positive experiences in different MS are described

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ANNEX F – CHECK-LIST

- This checklist helps practitioners of the construction and demolition industry to see if they have followed the most important steps in their demolition, construction and renovation projects to guarantee optimal reuse and recycling of construction materials
- It follows the structure of the Procol:
  - Waste identification, source separation and collection
  - Waste logistics
  - Waste processing and treatment
  - Quality management and assurance

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CONCLUSIONS

- The Protocol is a very practicle and simple tool very useful both for the private and the public sector
- Its aim is to create a market for the recycled aggregates analyzing the process from the demolition to the certification of the recycled aggregates
- ANPAR has been part of the European working group and believes that the Protocol shoul be applied in Italy (and everywhere!) both at regional and national level to reach the circularity of the building sector
- The Protocol shows with very practicle schemes examples of best practices in the different phases of the recycling process that could easily be imported in the different MS

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