

European Standards for Archaeological Wood – purpose, production and application

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Abstract

This paper describes the process leading to the creation of CEN TC346 Standards for waterlogged wood, and how they will be applied within our sector and their relevance to our profession. An update is provided on progress so far on the two new standards that the WG9 have been working on, with the provisional titles: 'Guidelines to the Management of Waterlogged Archaeological Wood on Terrestrial Sites of Archaeological Significance' and 'Characterisation of the Condition of Waterlogged Wood'. These, it is confidently expected, will provide European archaeologists, conservators and archaeological curators clear guidelines and decision-making tools for effectively managing finds of wood from waterlogged sites.

Introduction

Anyone experienced with working with waterlogged organic archaeological materials will appreciate their great potential as sources information, but also their extreme vulnerability - as compared with most other freshly excavated materials. Various sources of information and guidance exist to advise archaeologists and others on how to manage finds of wood on archaeological sites, but they tend to lack consistency and authority. The concept of applying internationally recognised standards within the heritage conservation field is quite new and archaeological fieldwork, although now often closely associated with commercial site development and construction, is not yet regulated by EU standards. So, to have standards within the field of archaeological conservation is a very novel, even ground-breaking concept, and what better area to start with than waterlogged wood.

Working Group 9 of CEN TC 346 was formally constituted during the WOAM Istanbul conference in 2013, and held its first meeting aboard a pleasure boat on the Bosphorus. This was a fitting start to a programme of work that would involve a group of 10 wood conservation specialists and wood scientists from a number European countries and which will take at least six years to complete. The work we set ourselves was initially to draft two European standards applicable to the management of waterlogged archaeological wood.

This new working group is part of the TC 346 "Conservation of Cultural Heritage" programme of the European Committee for Standardization (CEN) and is under the secretariat of the Italian Standards organisation, Ente Nazionale Italiano di Unificazione (UNI).

Background to European standards and CEN

Founded in 1961, and with its HQ in Brussels, CEN (Comité Européen de Normalisation in French) is one of the three European Standardization Organizations (together with CENELEC and ETSI) that have been officially recognized by the European Union and by the European Free Trade Association (EFTA) as being responsible for developing and defining voluntary standards across the European Union.

CEN is composed of the standards organisations of the 28 EU member countries, and four associated states - for example, the British Standards Institute (BSI) for the UK; Ente Nazionale Italiano di Unificazione (UNI) for Italy; and Dansk Standard (DS) for Denmark. The primary functions of these national bodies are to promote and maintain standards across most areas of industry, production, commerce, and the service industries, including:

- Building & Civil Engineering
- Health & Environment
- Materials & Chemicals
- Electrochemical
- Management systems
- Consumer products & services
- Information management
- Risk

By providing a platform for the development and harmonising of standards, CEN sees its overarching role as encouraging and supporting economic growth within Europe by removing trade barriers to the ultimate benefit and welfare of European citizens and the environment.

The national bodies are also responsible for compliance in the application of these standards, and offer the all-important training in quality assurance, certification and verification in these areas. Each European Standard (EN) introduced by CEN becomes a national standard, translated into the national language, although the 'official' languages of CEN are English, German and French. Standards are available for download, for a fee, from the website of each national standards body. The British Standards Institute, as just one example, employs three thousand people, currently lists 37,000 Standards, is currently working on 7,500 new standards through 10,700 voluntary committee members working on 1,250 Working Groups. The quality management systems standard, ISO 9001 – which started life at BSI in 1979 as BS 5750 – is now recognized as the world's most successful standard having been adopted by more than one million organizations in 178 countries.

Technical Committee (TC) 346 - what does it do?

Conservation Science is a very recent field which has only really developed in the last five decades and the international scientific community is nowadays much larger than it used to be even twenty ago. As a result, it is now widely accepted that the protection and conservation of our cultural property cannot be successful without science and research. In 2001 UNI, the Italian standardization body, presented a request to CEN to create a new TC (Technical Committee) to deal with the conservation of cultural property. The scope of CEN/TC 346 is the standardization in the field of definitions and terminology, methods of testing and analysis, to support the characterisation of materials and deterioration processes of movable and immovable heritage, and the products and technologies used for the planning and execution of their conservation, restoration, repair and maintenance. To date TC346, under the secretariat of UNI, have published 27 standards via its eleven international Working Groups, twenty of which are concerned with aspects of the conservation of historic buildings. The remaining seven are more museum and collection based and to date, are:

PD 16163:2014	CEN/TS	Conservation of Cultural Heritage. Guidelines and procedures for choosing appropriate lighting for indoor exhibitions
BS 1:2014	EN 15999-	Conservation of cultural heritage. Guidelines for design of showcases for exhibition and preservation of objects - General requirements
BS 16141:2012	EN	Conservation of cultural heritage. Guidelines for management of environmental conditions. Open storage facilities: definitions and characteristics of collection centres dedicated to the preservation and management of cultural heritage
BS 16242:2012	EN	Conservation of cultural heritage. Procedures and instruments for measuring humidity in the air and moisture exchanges between air and cultural property
BS 16648:2015	EN	Conservation of cultural heritage. Transport methods
BS 16095:2012	EN	Conservation of cultural property. Condition recording for movable cultural heritage
BS 15946:2011	EN	Conservation of cultural property. Packing principles for transport

The TC 346 standards are intended to provide a benchmark for how work should be carried out, which is significantly missing in the Conservation field which is, at present, mainly unregulated. So, the lack of uniformity of processes, materials, regimes, protocols, planning and management can all put heritage at risk. The shared vocabularies, terminology and glossaries, plus the standard published references on which each standard is based, will tend to give uniformity across the sector and foster the idea of 'best practise'. This will not only improve the quality of our work, but create trust across borders and between professions. Standards are voluntary, and are intended to give us the tools to do a good job, with confidence. They are not prescriptive in terms of taking away professional judgement, nor are they legally enforceable, but could be applied within, say, a contractual dispute. They tie in comfortably with the regulations and guidelines of professional conservation organisations such as ICON/PACR (UK) and ECCO (Europe). At a purely practical level, standards allow the production of project briefs to be expressed in a clear and unambiguous way so that contractors may tender for a job in the confidence and certainty that the client knows exactly what is required and how it should be achieved.

Working Group 9 'Archaeological Wood' - composition and process .

One of the frameworks organised and funded by the EU is COST – European Co-operation in Science and Technology - which is the longest-running European framework supporting trans-national cooperation among researchers, engineers and scholars across Europe. COST is composed of a number of Actions (research programmes) one of which, COST Action IE0601, is concerned with Wood Science for Conservation of Cultural Heritage, with the tag 'WoodCultHer'. A meeting of IE0601 held in Copenhagen in 2011 focused on the potential need for standards in waterlogged wood. During the meeting proposals for two standards were developed and submitted by the group of COST experts for approval by CEN TC346 council. As the TC business plan was under revision, the approval of the pre-work items required a long time, about one year. Prof. Marco Fioravanti took the idea forward for the two new work items (standards) to CEN at the TC 346 Venice meeting in 2012, where he was invited to become convenor of the new WG9, 'Waterlogged Wood'.

The individuals making up the working group “Archaeological wood” (WG9) of TC 346 were nominated by their national standards bodies to represent their countries as national ‘experts’. The work is undertaken entirely voluntarily, group members being supported either by their employing institutions or their national standards bodies. The members of WG9 are:

Prof. Marco Fioravanti (Convenor)	GESAAF - University of Florence, Italy
Dr Jana Gelbrich	DSM – Bremerhaven, Germany
Dr Quoc Khoi Tran	CEA – Grenoble, France
Prof. Charlotte Björdal	Univ. Goteborg – Sweden
Dr Kristiane Straetkvern	NatMus – Denmark
Prof. David Gregory	NatMus – Denmark
Prof. Elizabeth Peacock	NTNU – Trondheim, Norway
Prof. Anastasia Pournou	TEI – Athens, Greece
Anna Petrou	TEI – Athens, Greece
Jim Spriggs	Ind. Consultant, York, UK

The work of researching and drafting the first standard *‘Guidelines to the Management of Waterlogged Archaeological Wood on Terrestrial Sites of Archaeological Significance’* has taken six two-day meetings, spread over two years. The second, entitled *‘Characterisation of the Condition of Waterlogged Wood’* has been considered during two meeting so far.

Once a draft of each standard has been finished to the satisfaction of the Working Group members, it is submitted to CEN who will send it out to each national standards body for comment by their ‘mirror group’. These are groups of specialists within each country, competent to make comments and, finally, vote on accepting the standard or not. In the case of the UK British Standards Institute, the committee named B/560 ‘Conservation of tangible cultural heritage’ acts as the mirror group. This is composed of 24 invited or nominated ‘experts’ in this particular field, drawn from universities or other recognised national bodies, and therefore deemed representative and possessing state-of-the-art knowledge. When comments have been received back from each country’s mirror group, the Working Group will either incorporate suggested changes in the draft standard, or give reasons why the comment has not been acted on. Each national mirror group will then vote on whether to accept the standard, CEN Council acting as the final arbiter before acceptance - the whole process taking about four to five years.

Waterlogged Wood Standards – purpose, structure and content

The underlying concept of the two standards on waterlogged wood is to provide a management tool which sets out methodically what has to be done to provide a good outcome, but not go into the detail of exactly how each action is achieved. So the knowledge, experience and skill of the individual archaeologist, conservator or other specialist is not circumscribed but, in fact, enabled by the knowledge that work carried out by others on the same project is done in the best possible way. As it says in the Introduction to the first standard *‘Conservation of Cultural Heritage — Guidelines for the Management of Waterlogged Wood on Archaeological Terrestrial Sites’* (prEN 16873):

'The successful management of archaeological wood finds from waterlogged sites starts in the planning phase of any excavation. From the moment of exposure, waterlogged wood finds are extremely vulnerable to a range of man-made and natural threats. There is a real risk of losing the artefact if it is not handled and conserved properly. To minimize these threats and prevent damage, several actions must be taken in the field which must include proper management of the site and handling of the finds. These activities should be carried out by professionals, specifically qualified in the management and handling of waterlogged archaeological wood.'

The standard is arranged in logical sections, starting with 'normative references' which state which existing Standards are relevant, and 'terms and definitions' which seek to clarify what each technical word or phrase means, followed by its normative reference (e.g. Condition - Physical state of an object at a particular time (EN 15898:2011 (E)). Text sections then follow, starting with pre-excavation planning through exposure, cleaning and recording of wood finds, on to on-site protection, lifting and short-term storage, ending up with packaging and transport. Finally, there are four key references to field guides which provide further practical advice.

This standard has been voted for acceptance by all the national mirror groups and its final ratification by CEN is anticipated in time for the WOAM Florence conference .

The second standard has as its provisional title 'Characterisation Of Waterlogged Archaeological Wood As A Management Tool'. It will explain the importance of assessing the condition of the wood in order to properly manage the finds and assist in advising the types of choices for further action. The draft introduction states:

'In waterlogged environments the microbial activity determines in wood a degradation that starts from the surface of the object and proceeds towards the interior. It affects the structural properties of the material (strength, hardness and density), its porosity and the proportion between the constitutive components of wood cell. The application of a preservation strategy will only be successful once the full knowledge of the material to be preserved has been obtained. Characterisation of the physical, chemical, and biological properties and the microbiological decay of the wood are essential element of this, in order to properly manage the finds in the site and to define the types of choices for further action regarding in-situ, reburial, conservation or preservation by record.'

The standard, still in preparation, will then proceed with a logical arrangement of analytical techniques, and guidance on how the various types of characterization can be achieved and applied. It should be ready for publication in late 2017 or 2018.

Conclusion and afterwords – a personal view

There can be little doubt that the drafting and application of standards within conservation is a positive step in the regulation of this important part of the heritage sector. As they become established and accepted , standards will become part of the contractual arrangements between

commissioners of work and conservation contractors and will become a normal part of our professional lives. They are not cast in stone, they are just tools for guidance towards 'best practise' and can be reviewed and revised at any time.

There is usually more than one approach to how anything to do with conservation is achieved, and every point and action written into these standards has been arrived at and agreed by consensus. Talking through the minutiae of wood conservation with ones European colleagues is always a pleasurable experience which challenges one's own thinking, exposes one to alternative methods and materials, and certainly sharpens one's use of language. Meeting as we do in each other's centres allows the chance to visit laboratories, see wonderful collections, and enjoy the company of colleagues new and old. I would strongly encourage others working within conservation to make contact with your national standards organisation and get involved with drafting new standards – it is good for your career, good for conservation, and good for our common European heritage.

Acknowledgments

I am very grateful to my WG9 colleagues, listed above, for 'volunteering' me to produce this paper, and for much encouragement and assistance in its production. I would also like to thank BSI staff and members of the B/560 mirror group for their support.