



Freight Containers

Believing that standardization was the path to overall industry growth, Mc Lean provided ISO a royalty free license, allowing the use of his patented designs in the creation of international standards

10' Container

Payload 30,000 lbs.
Tare weight 3,500 lbs.
Cubic Capacity: 582 cu.ft.

Exterior Dimensions

L: 10'
W: 8'
H: 8' 6"

Interior Dimensions:

L: 9' 5"
W: 7' 8" - 1/8"
H: 7' 9" - 5/8"



20' Container

Payload 48,600 lbs.
Tare weight 5,015 lbs.
Cubic Capacity: 1,164 cu.ft.

Exterior Dimensions

L: 20'
W: 8'
H: 8' 6"

Interior Dimensions:

L: 19' 5"
W: 7' 8" - 1/8"
H: 7' 9" - 5/8"



40' Container

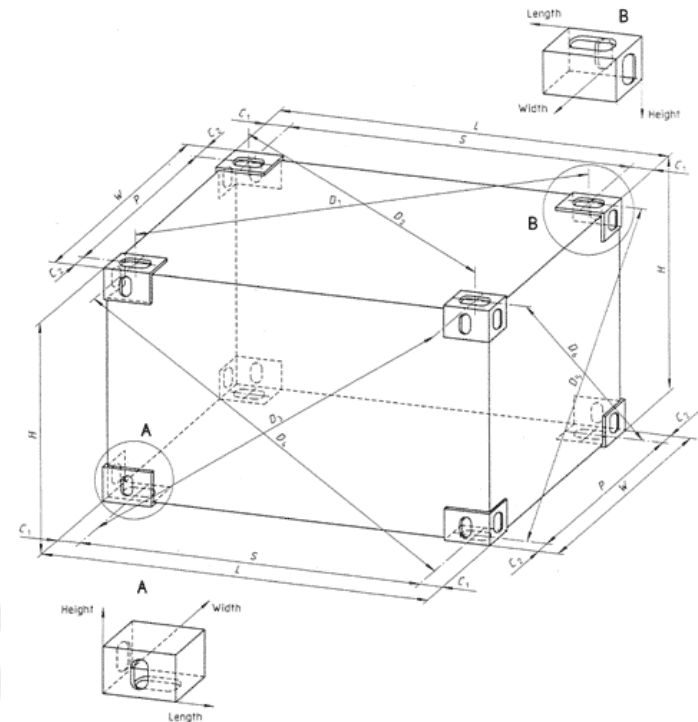
Payload 80,350 lbs.
Tare weight 8,377 lbs.
Cubic Capacity: 2,376 cu.ft.

Exterior Dimensions

L: 40'
W: 8'
H: 8' 6"

Interior Dimensions:

L: 39' - 3/8"
W: 7' 8" - 1/8"
H: 7' 9" - 5/8"





Standards for Freight Containers (ISO TC 104)

- **Standardization** was a critical factor for the development of the world transportation infrastructure, which required a coordinated effort of players as diverse as
 - Cargo, railway and truck transportation companies
 - Public authorities responsible for transportation
 - Port and railway operators



Moving Picture Expert Group (MPEG) [ISO/IEC JTC 1 SC 29 WG 11]

The idea (end 1980's)

- Different countries and industries have different agendas for media in digital form, but
 - Digital **audio-visual compression is mature**
 - The enabling technology is “**common**”
- We need a place to specify “information representation”
 - **Independent of applications** (e.g. delivery)
 - Of global scope
- To act as a **bridge between R&D results and standards**
 - Different competences add
 - Different agendas neutralise



MPEG founder's view



- A fight between technologies is less expensive than a fight between assembly lines
- A format war is a fight between assembly lines
- The development of a standard should be a fight between ideas supported by technologies
- The result is better in terms of: cost of technology, functionality and performance
- A standard for digital media



The MPEG philosophy

- **Develop standards** for converging media
- **Find** research results from multiple sources **and integrate** the **technologies**
- **Act as a bridge** between academia/research and industry
- **Develop software** implementations of the standards as a platform for peer review and optimization
- **Verify the performance** of the standard



MPEG Figures

- **Frequency:** 4 meetings/year
- **# of meetings:** 115 until June 2016
- **Attendance:** ~**500 experts**
- **Countries:** actively represented ~25
- **Industries represented:**
 - Academia
 - Broadcasting
 - Computers
 - Consumer Electronics
 - Content
 - Research
 - Services
 - Telecom, ...



MPEG: The Impact

MPEG standards **have changed the landscape of media**

☺ **MPEG-1, -2, -4** used in **billions** of devices

- **Video CD** players (all of MPEG-1)
- **MP3** players (MPEG-1 Audio Layer 3)
- **Digital TV** set top boxes (MPEG-2 Video/Systems and MPEG-1 Audio Layer 2)



- **DVD** players (MPEG-2 Video/Systems)
- Photo **cameras** (MPEG-4 Visual/AVC)
- Mobile **handsets** (MPEG-4 Visual/AVC, AAC, File Format)
- **Movie players** (MPEG-4 Visual + MP3)



MPEG Emmys' Awards



Hollywood, Los Angeles (USA) on 23 August 2008

Las Vegas (USA) on 7 January 2009

The Academy of Television Arts and Sciences has acclaimed the development of the High Profile of **ISO/IEC 14496-10 | ITU-T H.264 Advanced Video Coding (AVC)** as being among the "developments in engineering that are either **so extensive an improvement on existing methods or so innovative in nature** that they materially affect the transmission, recording or reception of television".



International Conference on Standardization and Innovation

13-14 November 2014 @ CERN, Geneva





Standardization and Innovation



http://www.iso.org/iso/standardization_and_innovation.pdf



HINTS ON NEW DIRECTIONS

- Standards for Industry 4.0
- Standards and sustainability
- Standards for the Circular Economy