The Changing Nature of Building Contents

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IKEA Group Risk Management
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Småland, Sweden

Fire & Rescue Services:
- Fire Protection Engineer

IKEA:
- Risk Manager (Sweden)
- Area Risk Manager (AP)
- Safety & Security specialist (Concept owner)
- Fire Safety Manager
Agenda:

- IKEA Group introduction
- IKEA - Fire Risk Handling
- The Changing Nature of Building Contents
  - Fire load – goods & range configuration
  - Type of storage solutions
  - New fire risks
  - Building components
The Changing Nature of Building Contents
IKEA Store Perspective

1952

1958

2013
11 new stores in nine countries

TOP 5 SELLING COUNTRIES
- Germany: 14%
- USA: 12%
- France: 9%
- Italy: 6%
- Russia: 6%

Sales increased by 9.5%

Co-workers: 139,000

IKEA.com: > 1 billion visits

The IKEA Catalogue was printed in 212 million copies

IKEA Group stores: 690 million visits

The IKEA range: 9,500 products
Total number of IKEA Store: 348 Stores

Shopping Centre
Distribution Centre (DC)
IKEA – Fire Risk Handling

Historical perspective:


IKEA – Fire Risk Handling
Historical perspective:

- Israel 2011
- NOT IKEA Group owned unit!
IKEA – Fire Risk Handling
Concept development – Building content

Development IKEA concept:
• Concept layouts
• Sales solutions
• Logistic handling
• Store equipment
  • Restaurant
  • Money handling
  • IKEA range
• Packaging concept
  • Etc.

Risks:
• Fire
• Accident
• Crime
• Natural hazards
• Etc.

IKEA Safety & Security
“proven solutions”
More than 50 years of experience!
IKEA GROUP - 305 stores!
Inter IKEA Systems Manual

IKEA Store

Harmonization?

National codes

IKEA Group Risk Manual

IKEA Engineering & Construction Manual

10
International standards:
Design:

- EN
- CEA
- NFPA
- FM
The Changing Nature of Building Contents
IKEA Store Perspective:

- Fire load – goods & range configuration
- Type of storage solutions
- Building components
- New fire risks
The Changing Nature of Building Contents
Fire load – goods & range configuration

- 1958 – 1970
  - Most wooden products
  - More or less everything in cardboard boxes
The Changing Nature of Building Contents
Fire load – Goods & Range configuration

- 1980 – 2013
- More plastic products in our range
  - New products / range
  - Not packaged in cardboard boxes
  - Shrink wrapping
The Changing Nature of Building Contents
Fire load – goods & range configuration

- Exposed Expanded Plastics
- Rolled mattresses
- IKEA testing 1980-
  - SP, FM, Vds, Viking, CCI, UL
- Challenge:
  - Few international standards?
  - In-rack solutions – flexibility?
  - IKEA standards – Approval authorities
  - Sensible solutions – Flue space
  - Expensive installations

Test at FM1999-2000
The Changing Nature of Building Contents

Fire load – Study Goods & Range configuration (2008-9)

- Showroom
- Restaurant
- Market hall
- Self serve furniture area
- Warehouse
The Changing Nature of Building Contents

Fire load – Study goods & range configuration (2008-9)

- Showroom
- Restaurant
- Market hall
- Self serve furniture area
- Warehouse
The Changing Nature of Building Contents
Fire load – Study goods & range configuration (2008-9)

- Showroom
- **Restaurant**
- Market hall
- Self serve furniture area
- Warehouse
The Changing Nature of Building Contents
Fire load – Study goods & range configuration (2008-9)

- Showroom
- Restaurant
- Market hall
- Self serve furniture area
- Warehouse

IKEA Group Risk Management
The Changing Nature of Building Contents
Fire load – Study goods & range configuration (2008-9)

- Showroom
- Restaurant
- Market hall
- Self serve furniture area
- Warehouse

High fire load – Focus area!
### BOLINGBROOK PRODUCT CLASSIFICATION

<table>
<thead>
<tr>
<th>RANGE GROUPING</th>
<th>ARTICLE NO.</th>
<th>ARTICLE NAME</th>
<th>PIECES STORED IN WAREHOUSE BACKING</th>
<th>PIECES FOR PALLET</th>
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Classification according:

- Chapter 23 of the 2006 International Fire Code (IFC).

The Changing Nature of Building Contents

Fire load – Study goods & range configuration (2008-9)

Approx. 10,000 articles 2000 in Warehouse (Rack storage)
The Changing Nature of Building Contents
Fire load – Warehouse goods configuration

- Generally the volume of plastic have increased
- More Exposed Expanded Plastic

BOLINGBROOK - 11 DECEMBER 2008 - STORAGE IN WAREHOUSE
(CATEGORIZATION; NO. OF PALLET; PERCENTAGE OF PALLET)

IKEA Group Risk Management
The Changing Nature of Building Contents
Fire load – Comparison study (2010)

IKEA Mattresses
Polyurethane

Latex Mattresses
Latex

Standard Commodity: The Exposed Expanded Group A Plastic
The Changing Nature of Building Contents
Fire load – Sprinkler test (2012-13)

- Develop NFPA sprinkler protection criteria - Expanded exposed Group A plastic commodity
- Vertical barriers
- NFPA 13 (2016) revision process
The Changing Nature of Building Contents
Fire load – Showroom & Market hall configuration

- Fire load
  - Range development
  - Different load
- Sales solutions
  - Obstructions
  - Storage height
We have a lot to be proud of!

Cost-saving
Branding
Efficiency
Simplicity
Ease of shopping
Sustainability
The Changing Nature of Building Contents
Type of storage solution: Sales solutions

- Storage - Sales
  - Change of fire load
  - Goods - storage
  - Range - selling
The Changing Nature of Building Contents
Fire load – Sprinkler design

Figure 1: Store Layout Ground floor

Table 7-1 Area Classification European Standard and NFPA 13

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<th>NFPA 13</th>
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IKEA Engineering & Construction manual
The Changing Nature of Building Contents
New fire risks

- Lithium batteries
- Storage
- Usage
- Battery management

FIXA hammer drill
li-ion 14.4 V
The Changing Nature of Building Contents
Fire load – Building components

- Combustible insulation
- Roof & Walls
- Freezers
- Solar panels
The Changing Nature of Building Contents
Fire load – Building components

IKEA Standard

Hot Work!
The Changing Nature of Building Contents
Conclusion - Vision

- High level of fire safety
- Awareness
- Technical development
  - Flexibility
  - Simplicity
  - Cost efficient
  - Sustainable

Most things still remain to be done. A glorious future!