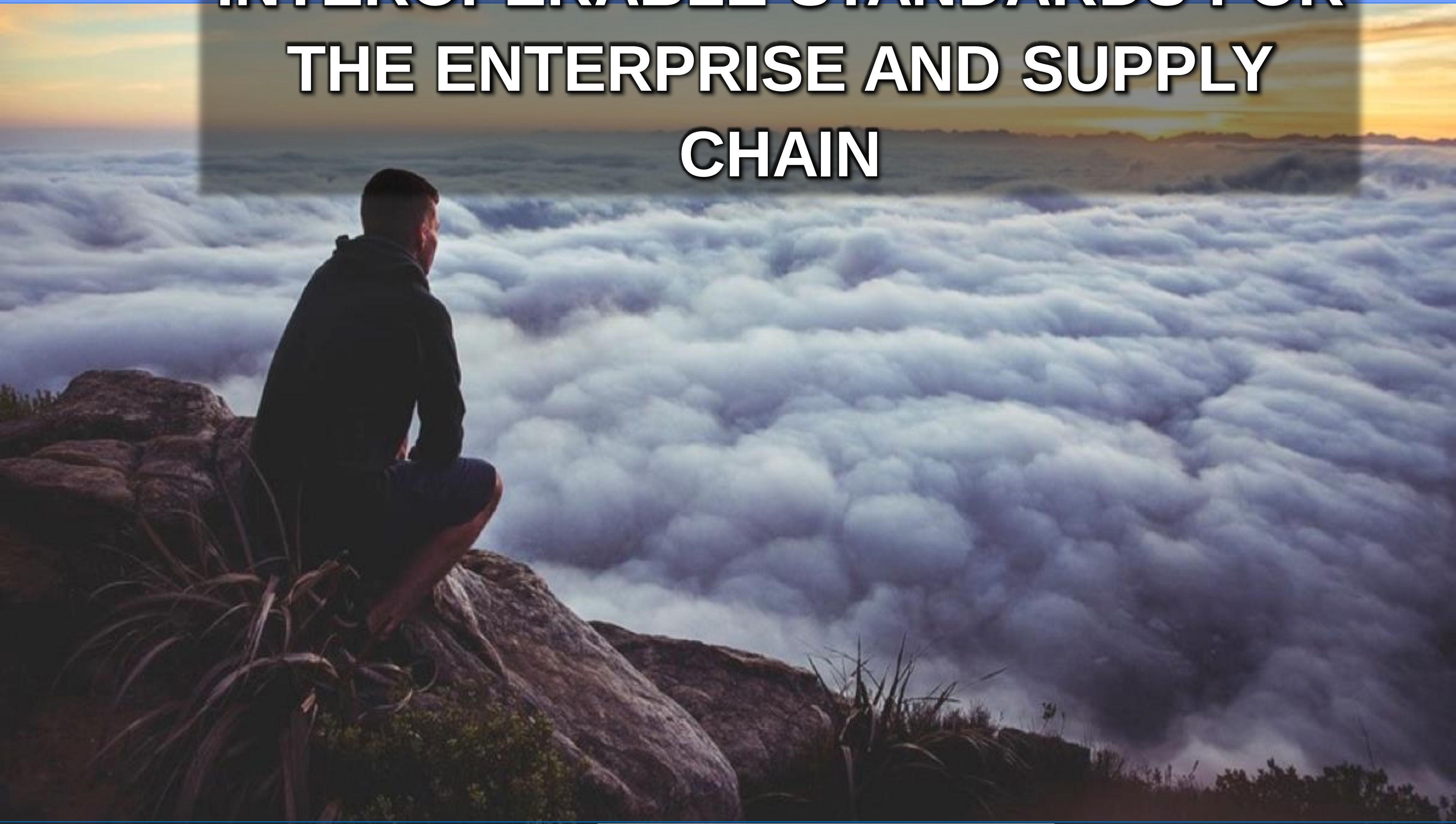
SWISS

The Semantic Web for Interoperable Specs and Standards

SWISS

Global Produc

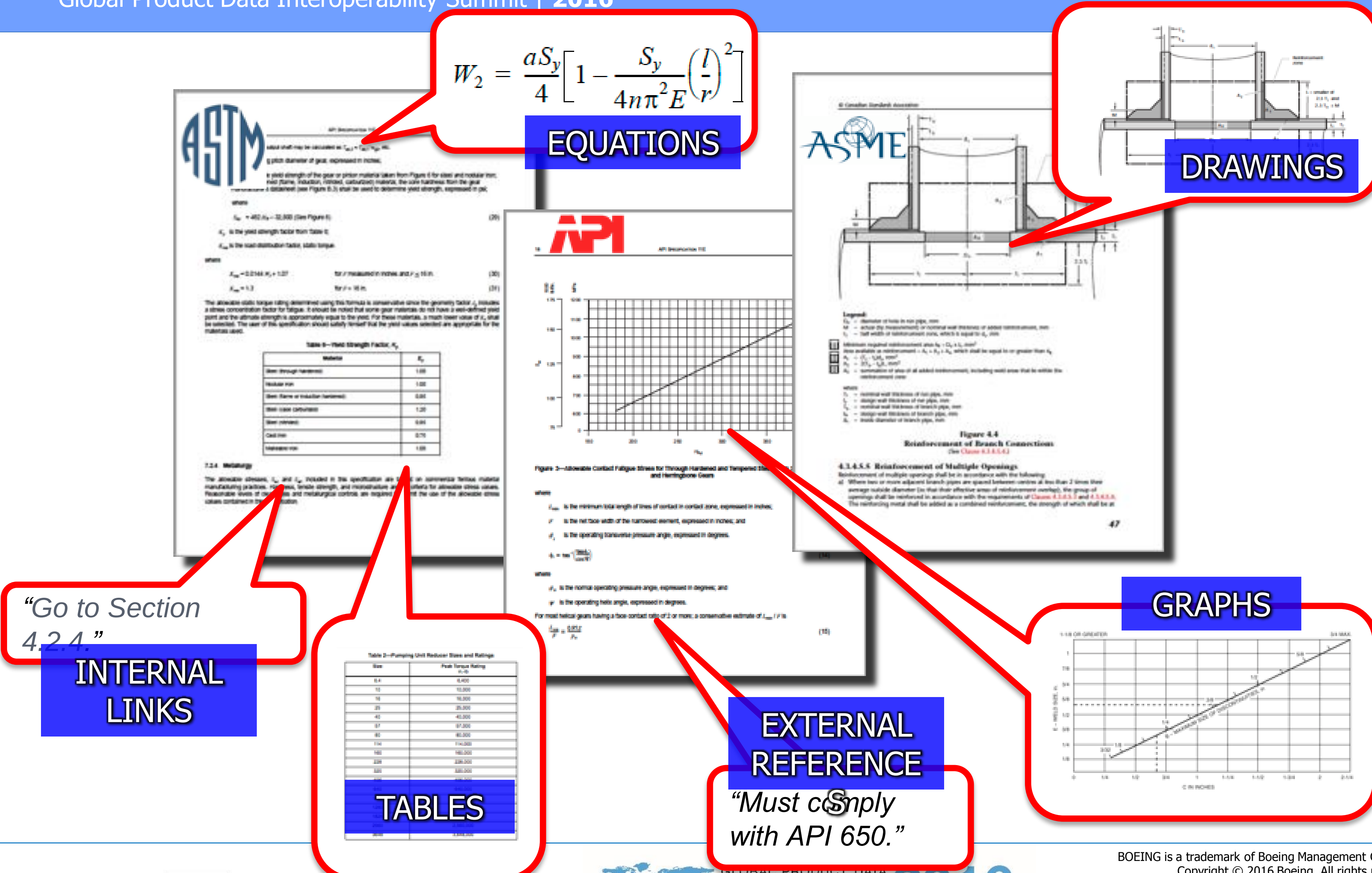
INTEROPERABLE STANDARDS FOR THE ENTERPRISE AND SUPPLY CHAIN



WHY WE DO WHAT WE DO?

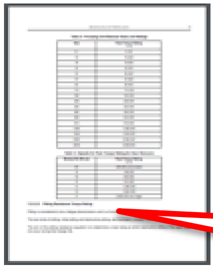
Millions of engineers spend hours every day navigating and analyzing information in order to make the next decision in their workflow. Those decisions are fraught with significant time, cost, and risk.

STANDARDS CONTAIN “DATA ELEMENTS”



USING THAT DATA IS CHALLENGING

Data Element	Now What?



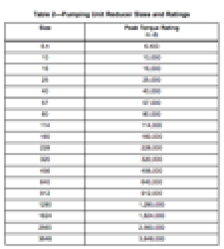
References

"Must comply with API 650."

Obtain API 650, and find the relevant section (498 pages)

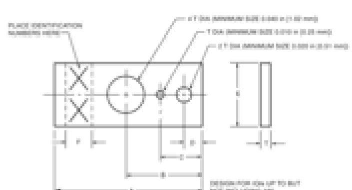
$$W_2 = \frac{aS_y}{4}\left[1 - \frac{S_y}{4n\pi^2 E}\left(\frac{l}{r}\right)^2\right]$$

Equations



Tables of Numbers

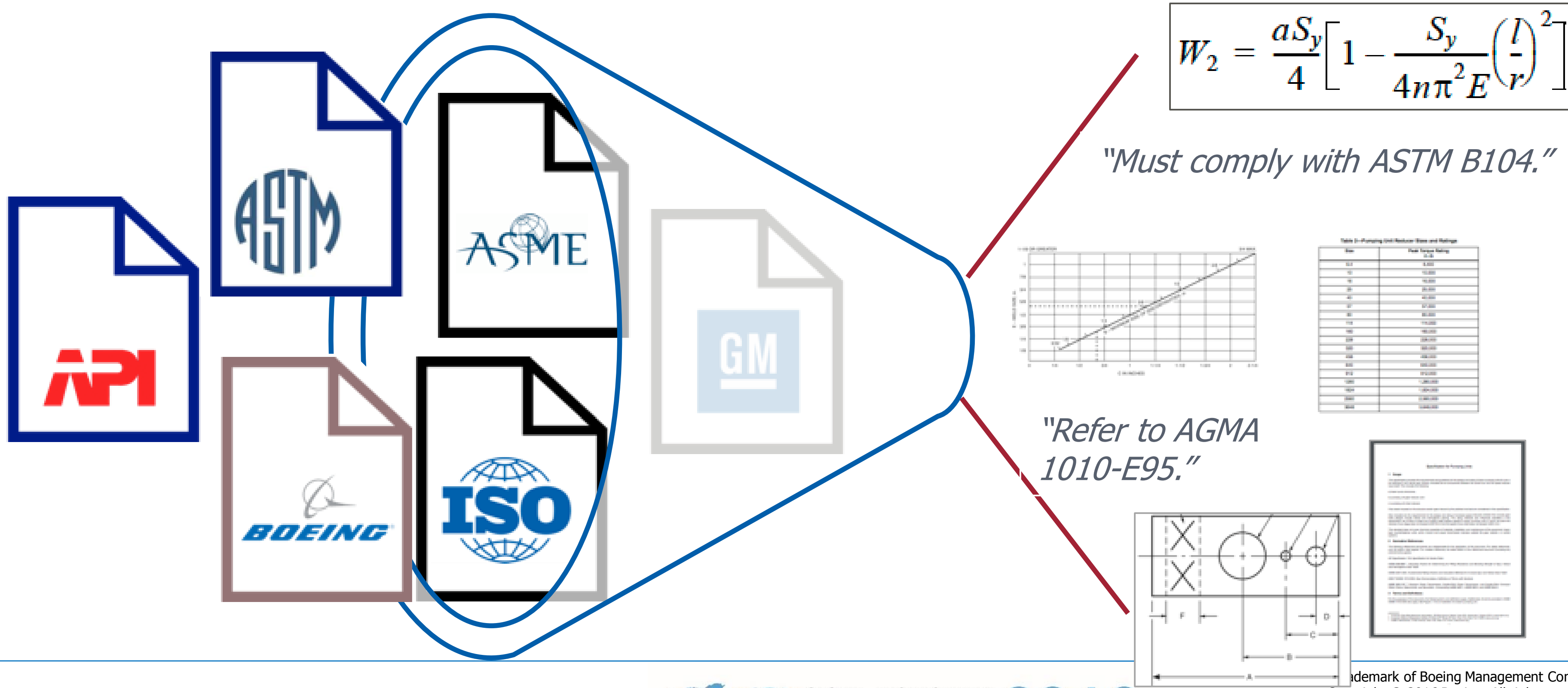
Copy manually or rekey into notebook, Word, Excel, Matlab, calculator, software, etc.



CAD Drawings

Recreate in CAD.

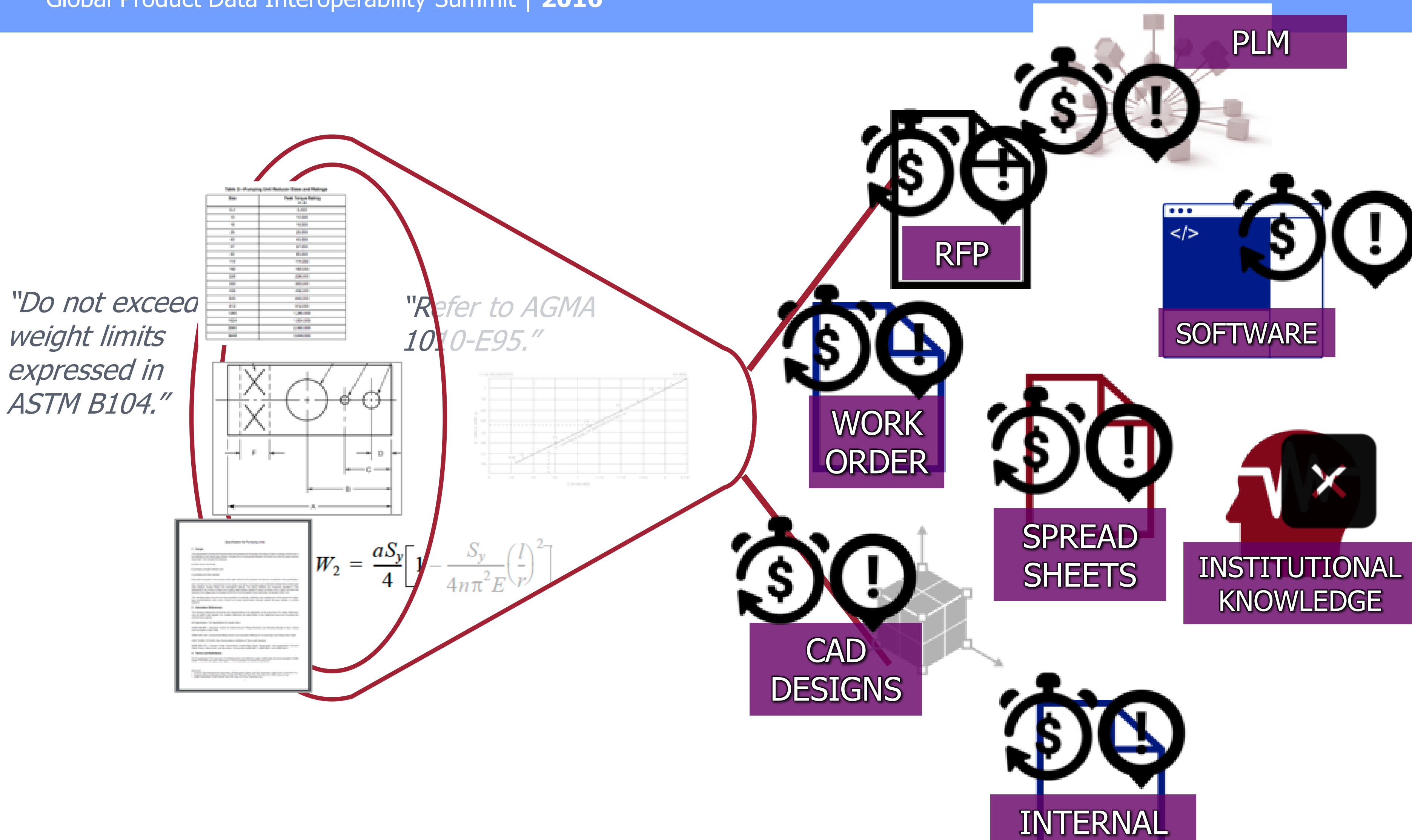
ONE PROJECT, TENS OF DOCUMENTS, THOUSANDS OF DATA ELEMENTS



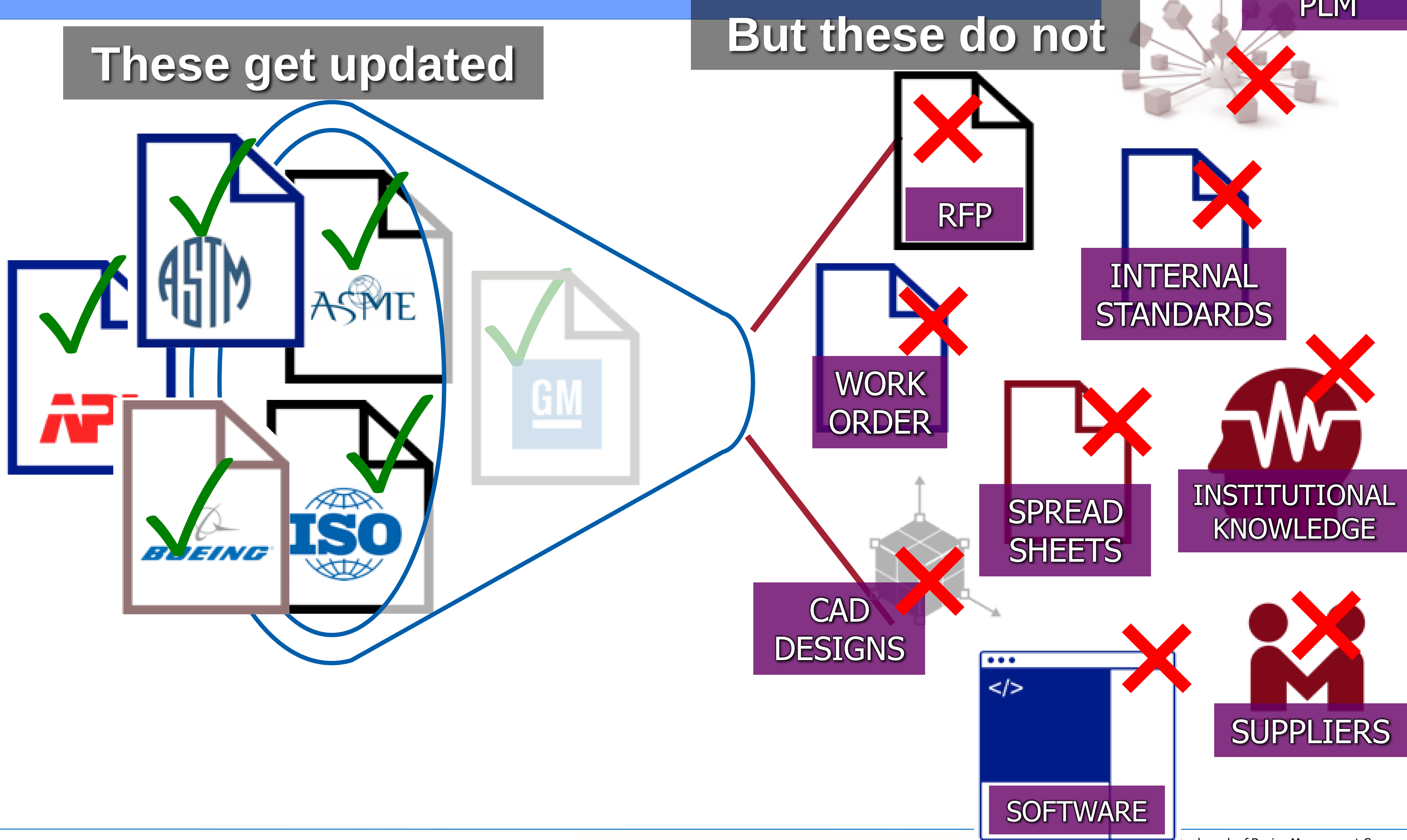
$$W_2 = \frac{aS_y}{4}\left[1 - \frac{S_y}{4n\pi^2 E}\left(\frac{l}{r}\right)^2\right]$$

INTEGRATION IS THE NORM

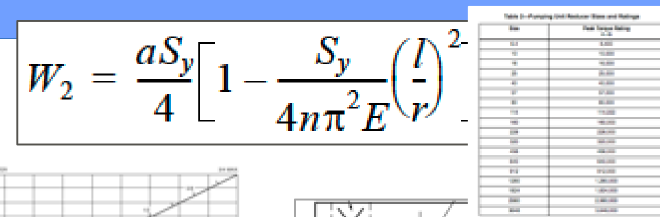
(BUT VERY DIFFICULT)

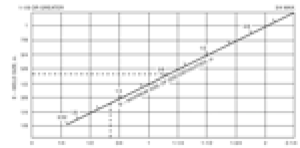


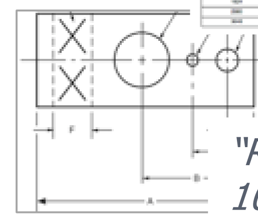
CHANGE MANAGEMENT IS DIFFICULT



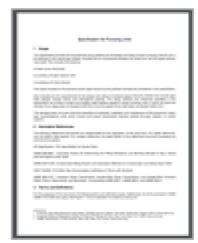
SEARCH VERSUS USAGE







"Refer to AGMA 1010-E95."



"Must comply with ASTM B104."

Search

Ten Minutes

Most advancements since 2000

Navigation, Analysis, Integration

Many hours

SWISS Focus

VERSION COMPARISON IS PAINFUL

Global Product Data Interoperability Summit | **2016**

2012 version

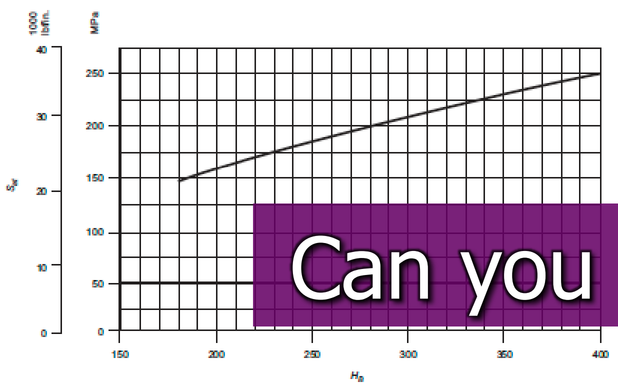


Figure 4—Allowable Bending Fatigue Stress for Through Hardened and Tempered Steel Gears S_{at}

where

Z is the length of line of action in the transverse plane, expressed in inches; and

p_N is the normal base pitch, expressed in inches.

With acceptable gear design, the above value of L_{min} / F is acceptable for a face contact ratio of 1.0 to 2.0. Equation (16) incorporates the expansion of I_p into a more precise equation for C_3 as:

$$C_3 = \left(\frac{\cos\phi_t + \sin\phi_t}{2}\right)\left(\frac{m_g}{m_g + 1}\right)\left(\frac{0.95Z}{P_N}\right)\left(\frac{S_{ac}}{C_p}\right)^2 \quad (16)$$

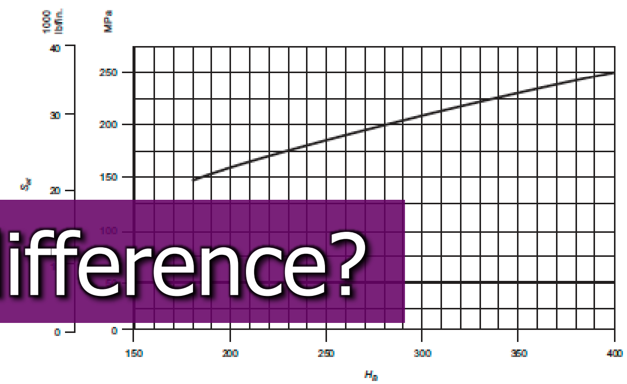
The method used in this specification for determining the geometry factors for pitting resistance I_p is simplified. A more precise and detailed analysis may be made using the method in AGMA 2001-D04 and AGMA 908-B89. The more precise method mentioned previously shall be used for face contact ratios less than 1.0. When I is determined in accordance with AGMA 2001-D04 and AGMA 908-B89 and if $2C_s / (m_g+1)$ is not equal to outside diameter minus two standard addendums, the operating pitch diameter of the pinion in all of the preceding rating equations shall be defined in accordance with AGMA 2001-D04 and AGMA 908-B89.

Incorporating the Equations for C_1, C_2 and C_3 into Equation (4) gives the following Equation (17) for T_{ac}:

$$T_{ac} = \left(\frac{n_p d_e^2 C_3}{2n_Q}\right)\left(\frac{F}{C_m} k_L\right)\left(I_p \frac{S_{ac}}{C_p}\right)^2 \quad (17)$$

2016 version

SPECIFICATION FOR PUMPING UNITS 19



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Can you tell the difference?

ELYSIUM · Parker · NORTHROP GRUMMAN · BOEING

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2016

WHY SWISS?

SWISS gives users the knowledge to act, and the ability to make better decisions faster.

SWISS SOLUTION

- Standards as digital data
- Cloud-based platform of interoperable “data elements”
- Seamless navigation within and between documents – *right to the section that matters*
- Easy integration into *controlled* Word, Excel, PLM, etc.
- Always up-to-date, always connected to source data

TECHNICAL WORKING GROUP
60 members, 20 orgs

DEFENSE LOGISTICS AGENCY
ASTM INTERNATIONAL
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NORTHROP GRUMMAN
BOEING
DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA
ASME SETTING THE STANDARD
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Honeywell
NASA
DEFENSE STANDARDIZATION PROGRAM MAKING SYSTEMS WORK TOGETHER
SAE INTERNATIONAL
UL
AWS
LOCKHEED MARTIN
LMI
AATCC
NACE INTERNATIONAL
IPC
AIA