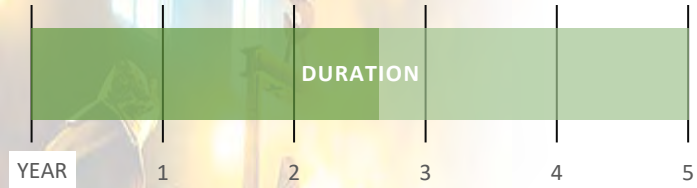
Virtual Knowledge Transfer Platforms for Improved Access to Metalcasting Best Practices

Brian Began, AFS

Emergent Metal Casting Technologies (EMCS)

AMC Technology Review

June 24-25, 2026



Overview

AMC
AMERICAN METALCASTING CONSORTIUM

- Needs and Benefits
  - Rapid and improved access to critical industry knowledge/resources/procedures for DoW/DLA and casting suppliers
    - Information will be converted to mobile-friendly formats for quick and easy accessibility
    - Better access to information will help make better-informed and more rapid decisions to assist in higher-quality castings, with shorter lead times, and improved cost-effectiveness
    - Benefits workforce development for DoW/DLA and industry
    - .mil and .civ emails will be granted comped access to the entire digital library
- Progress
  - Launch of library app, advanced AI search tool, and additional library features
  - Major digital platforms are on schedule
- Transition
  - Accessible on website (www.afsinc.org)
  - Will be subject of Metalcasting Congress presentations, webinars, and various publications (Modern Casting, Casting Source, IJMC)
  - Presented, reviewed, and shared with industry in various governing committee meetings
- Cost Share Provided
  - Cost share to date is $287,676 or 2.5% over the $280,577 project total required

Needs

AMC
AMERICAN METALCASTING CONSORTIUM

- Problem

  Rapid, cost-effective castings are hindered by
  - Loss of casting knowledge and expertise
  - Unavailability of information when/where needed
  - Inadequate process expertise

- Objective
  - Digitize critical physical resources on mobile-friendly platforms
  - Improve integration and searchability of digital references
  - Develop accompanying expert videos for critical procedures/expertise

- Solution
  - Implement mobile-friendly platforms with improved integration and searchability
  - Create and store videos for critical procedures (e.g., mold and core test handbook)
  - Promote to industry

Benefits

AMC
AMERICAN METALCASTING CONSORTIUM

DoW / DLA

- Active .mil and .civ emails will be granted free annual access to all digital content created
- Better accessibility and enhanced reference materials
  - Better dissemination of critical references
  - Improved quality/performance of DoW castings
  - Improved capture of expertise
  - Improved sustainability of critical DoW casting supply base
  - Faster adaptation of best practices into critical DoW casting supply base

Industry

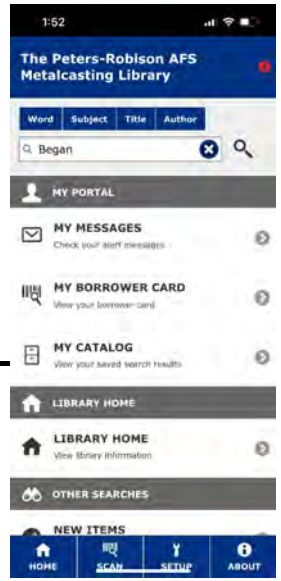
- Rapid access to information for better and quicker decisions to ensure higher-quality castings, shorter lead times, and improved cost-effectiveness
- Workforce development

"We started noticing that our 535 metal was losing more magnesium than expected, and at first, we couldn't figure out why. To help troubleshoot the issue, I used the AFS Library Assistant to look for direction. I found an article that discussed how extended degassing times can cause magnesium loss. That helped us realize we were degassing longer than necessary, which was likely the reason our magnesium levels were dropping.

The AFS Library Assistant directed me straight to the section of the paper where this issue was discussed. I quickly found the exact information I needed, which made the process much faster and helped us identify a likely cause of the issue." - Daniel Jaronczyk, *MBAF (Division of G&W Electric), Process Engineer II*

Progress 03/23 – 06/26

- Completed single sign on (SSO) on AFS library
- Launched Library App – Dec 2023
- Launched “My Catalog” in library – May 2024
- Completed 7 library search tutorials – June 2025
- Completed upgrade of website 2 releases to make the Onlive video platform mobile-friendly
- Launched AFS Library Advanced AI Search Tool – April 2025
- Created a sandbox publications E platform
- Presented at AFS Metalcasting Congress and published releases in all trade magazines websites, etc.



AFS Library Advanced AI Search

AMC
AMERICAN METALCASTING CONSORTIUM

- Held a webinar on Feb 19 with 70 registrations
- Launched the capability to find/cite information from 250+ webinars

Discover the AFS Library AI: Transforming How you Find Metalcasting Knowledge

View

WEBINAR
2/19/2026 1:00 PM
2/19/2026 2:00 PM

Learn how this powerful tool enables faster, smarter access to metalcasting research through advanced search and natural language assistance.

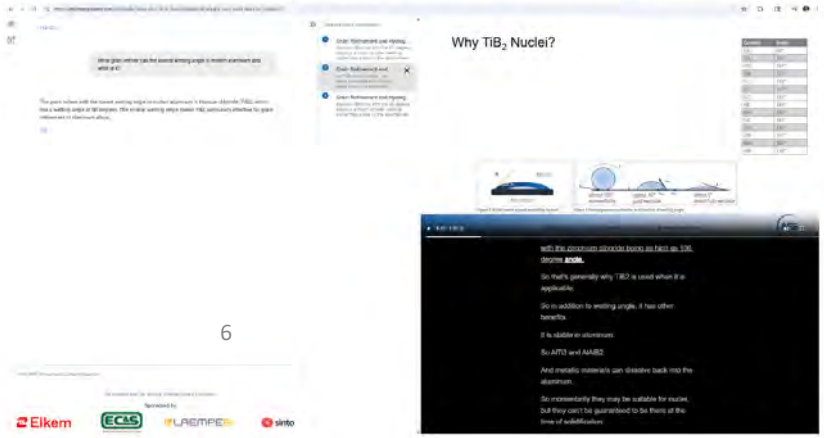
Member Price: Free

AFS LIBRARY ADVANCED AI SEARCH TOOL NOW INCLUDES AFS MEMBERS-ONLY WEBINAR CITATIONS

March 18, 2026

March 18, 2026 - The AFS Library Advanced AI Search Tool recently expanded to include the transcripts of the full archive of more than 250 AFS members-only webinars hosted on AFS Onlive. The new capability works the same as the AFS Transactions, Modern Casting, Casting Source & Research Report references within the Peters-Robson Technical Library; the tool answers the user's question and links to the specific slide and transcript location in the cited webinar where the answer was derived. The webinar can be played right from the citation link. AFS webinars range from technical and scientific research focused content to management and operations topics and AFS related news and updates.

The AFS Library Advanced AI Search Tool was launched in April of 2025 and is on pace to hit 300 unique users, 1250 threads, 4000 citations viewed, and 25,000 citations generated in its first year after launch. Thanks to our current sponsors, Elkem, EC&S, LaempeReich, and Sinto, this tool is provided free of charge for AFS Members. To learn more about the AFS AI Library Advanced AI Search tool, please view the tutorial #1 or tutorial #2, the recent Instructional webinar on tricks to using it, or reach out to Bo Wallace @ bwallace@afsinc.org with any questions.

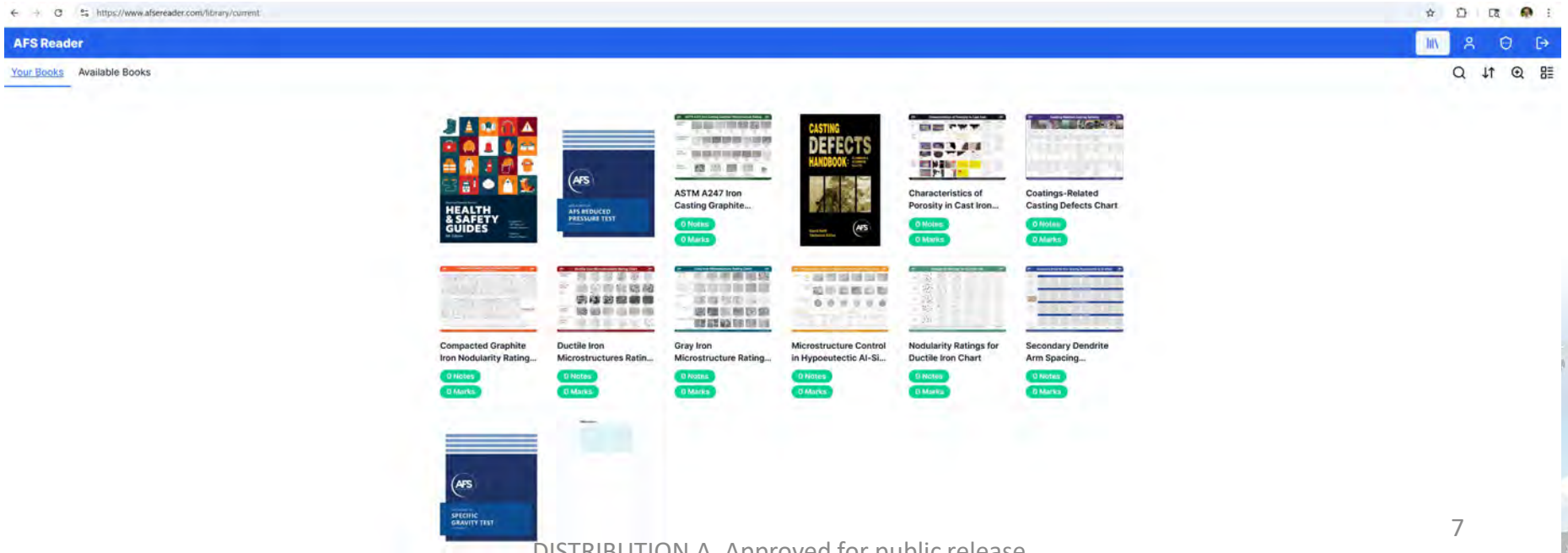


https://afslibraryaisearch.com/

www.afsereader.com

AMC
AMERICAN METALCASTING CONSORTIUM

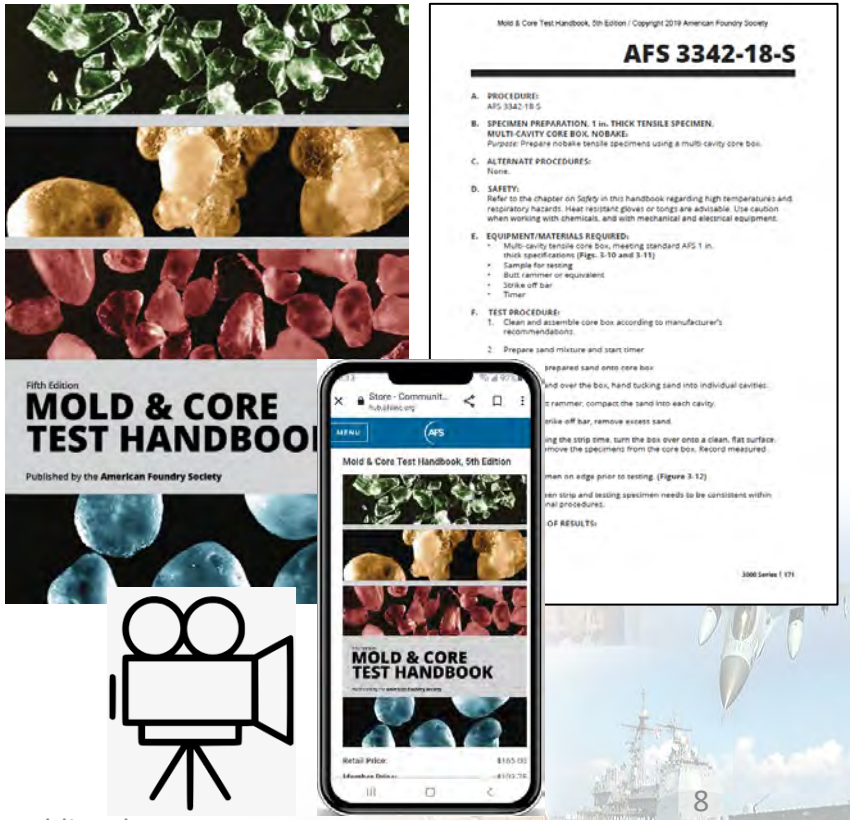
- Secured domain name
- Numerous milestones on construction all completed
- All known Section 508 issues have been resolved with platform except keyboard operation
- We are awaiting the creation of a few more titles and then giving our technical council members access for user feedback



Mold & Core Test Handbook (MCTH)

AMC
AMERICAN METALCASTING CONSORTIUM

- MCTH is priority and will include an additional 6th chapter for recommended research procedures
- Prelim editing started but identified several inconsistencies, we hope to start actual editing in Q4
- 7 additional videos are completed and only require final SME approval



Videos

AMC
AMERICAN METALCASTING CONSORTIUM

MCTH

- Green (9) videos were recorded at American Colloid Co. and are edited
- Yellow (11) videos are targeted for recording at TBD for MCTH
- Red (2) videos still need to identify a location

Standards

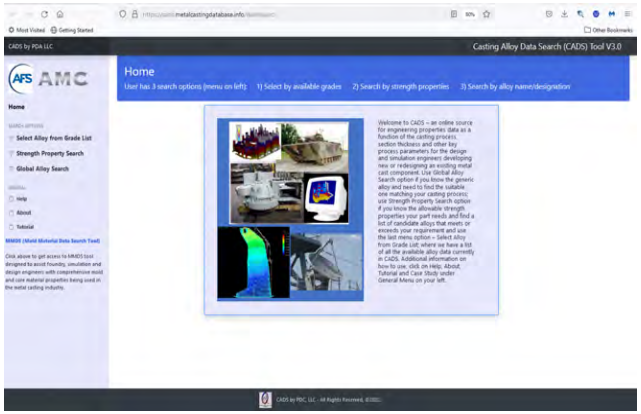
- Scripts were prepared for two aluminum videos for RPT and Specific Gravity test with some video content submitted for review.

a. WMU Video Taping Digital Active Clay Measurement, Green Sand
   i. 2212 – Video Complete
b. 1105 / 1106 – One Video combined with spreadsheet.
c. 2110 – Procedure mark-up for further review with SA&T
   i. Show both methods as defined in 8. & 9.
d. 2111 – Procedure mark-up for further review with SA&T
e. 2206 – OK to Video at ACC
f. 2209 – Need to confirm ACC has the Mold Strength Tester (30 or 50psi). Maybe incorporate electronic tester from Simpson Technologies… video at Simpson?
g. 2210 (2027)
h. 2230 – ACC has B & C scale units, electronic units also available… video at Simpson?
i. 2248 – OK to Video at ACC
j. 2249 – OK to Video at ACC
k. 3180 – OK to Video at ACC, will use LoVox… or HA?
l. 3185 - OK to Video at ACC, will use LoVox… or HA?
m. 3186 – Can't do Cold/Hot/Warm Box at ACC, need alternate lab (UNI?).
n. 3306 – Can't do at ACC, need alternate lab.
o. 3307 - Can't do at ACC, need alternate lab.
p. 3313 – Can't do at ACC, need alternate lab.
q. 3318 - Can't do at ACC, need alternate lab.
r. 4409/4411 (2025) – Video proposed, procedure not yet available.
s. 5220 - Can't do at ACC, need alternate lab.
t. 5221 – Is equipment available? ACC to evaluate.
u. 5222 - OK to Video at ACC.
v. 5523 - OK to Video at ACC.
w. 5224 - OK to Video at ACC.
x. 5202 (2029) – Video proposed, procedure not yet available.

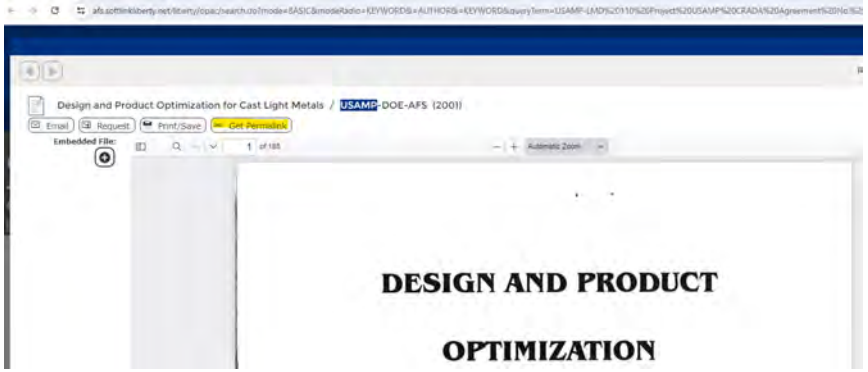
CADS Update

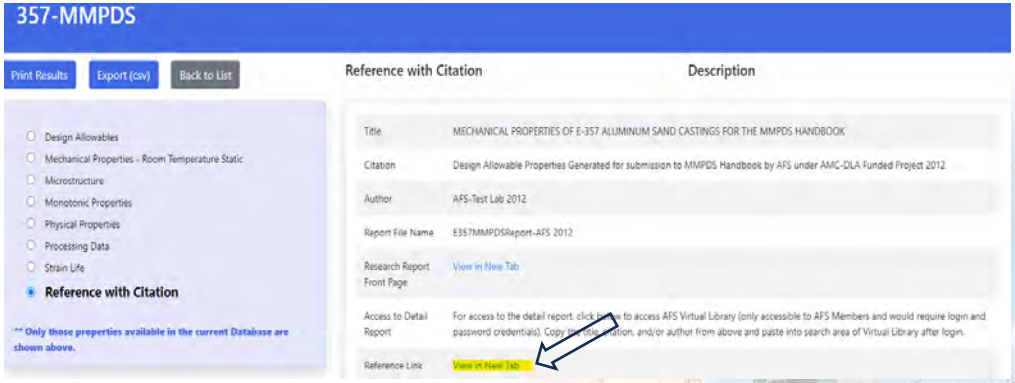
AMC
AMERICAN METALCASTING CONSORTIUM

- Site is continually being maintained and updated by PDA LLC.
- Currently more than 400 pedigreed datasets currently!
- All permalinks to pedigreed data was completed in Feb 2026.



Product Development Analysis

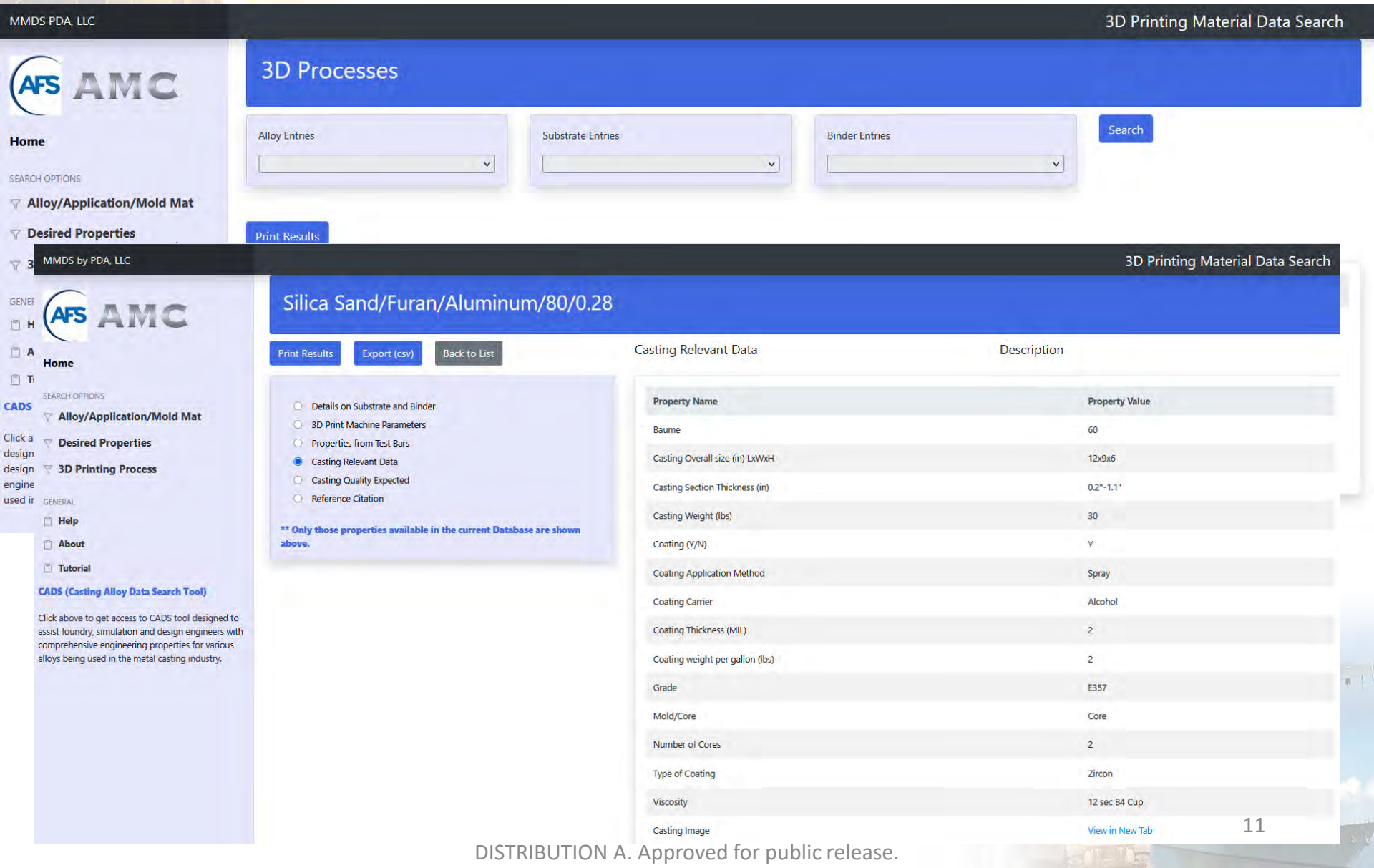




https://www.afscads.com/

3D Sand Printing Process Data Selector Search

AMC
AMERICAN METALCASTING CONSORTIUM



Section 508 Compliance

AMC
AMERICAN METALCASTING CONSORTIUM

- The single biggest issue/hurdle to completion
- Mod received 05.06.25, we originally underestimated impact
- Fortunately, our Institute was already in the process of converting our curriculum.
- Issues identified
  - Color contrast
  - Closed captioning
  - Font type/size requirements
  - Videos operated w/o a mouse (by keyboard only)

Section 508 Compliance

AMC
AMERICAN METALCASTING CONSORTIUM

- Webinars
  - We identified a way for all future webinars to have closed captioning. This feature started Feb 2026.
  - Back catalog will not be updated as ability to do so on platform was not available
- Training Videos
  - We did update video template and existing library for 508 compliance.
- CADS
  - Will not be done on this legacy platform as this would require extensive additional funding
- www.afsereader.com
  - Should be compliant but requirement has caused delay in launch.

Usage Metrics as of 03.01.26

- 756 (711) Electronic “loans” on the library app
- 137 (83) Accesses on the library tutorials
- 413 (494) papers are saved to a My Catalog account by 88 (84) unique users
- 2247 (1771) articles scanned and 963 (744) added into the library for use in the AFS Library Advanced AI service
- 1148 (870) threads by 291 (218) members, and 3759 (2585) citations viewed, 24,599 (19,962) citations generated since launch of the AFS Library Advanced AI Search tool.

- Please note values in (parentheses) were values on 11.01.25

Milestones

- Completed
  - Launched library app, my catalog, and AFS Library Advanced AI Search tool
  - Created library search tutorials
- In-Progress
  - Working on Section 508 compliance for non-preexisting platforms
  - Ongoing transitions via journal references, Metalcasting Congress presentations, committee meetings, etc.
- Planned
  - Go live with e reader site
  - Record 13+ MCTH and Standard videos

Project Plans

- Plans for the next 12 months
  - Bring all non-preexisting platforms compliant to Section 508
  - Go live with www.afsereader.com.
  - Finalize content for new 6th edition of Mold & Core Test Handbook
  - Add additional titles to AFS e reader according to established priority list of references and videos
  - Add missing or inadequate paper scans to the AFS library

- Longer term plans
  - Additional content creation

Transition Plan For Industry

AMC
AMERICAN METALCASTING CONSORTIUM

Events

AFS METALCASTINGCONGRESS
April 14 – 16, 2026 | Grand Rapids, MI
SHAPING TOMORROW IN METALCASTING

Website/Webinars

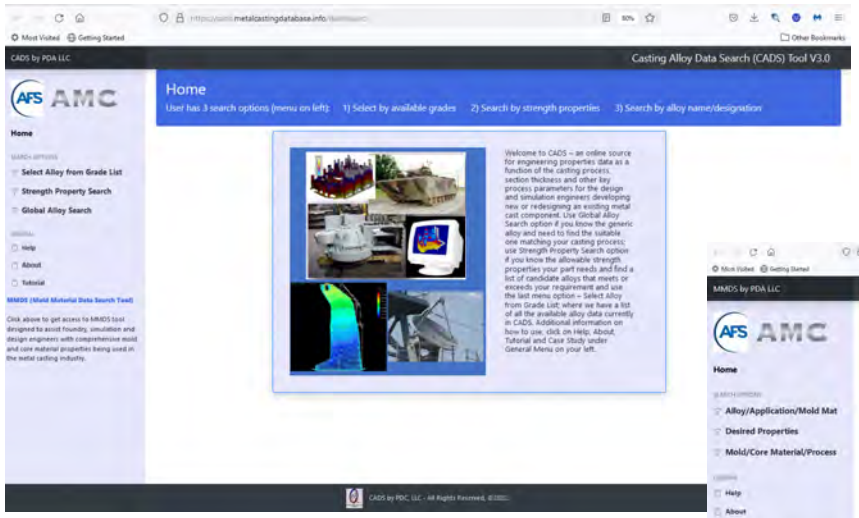
Publications

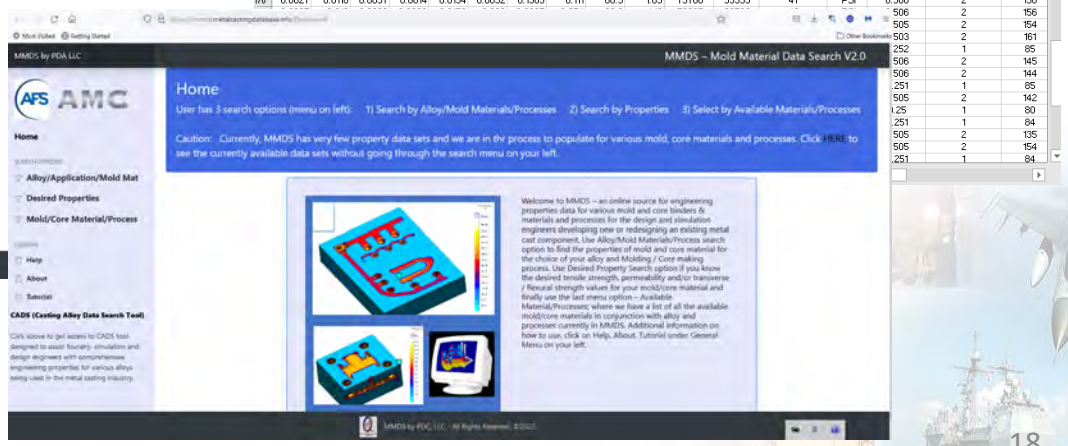
International Journal of Metalcasting

Committees

Leveraging

- Leveraging all of AMC, AFS, LIFT, DOE-funded research history as the library search tags will make the reports more readily searchable
- Leveraging CADS (ICT) and making a direct link to the source material in the library
- Concurrent America Makes IMPACT 1.0 project results are being input into CADS now





Project Metrics

AMC
AMERICAN METALCASTING CONSORTIUM

Description	Baseline	Threshold	Goal	How Measured	Target Date	Progress	How Demonstrated
Implement system architecture for mobile-friendly digital content	Only hard copy and downloads exist.	95% uptime	98% Advanced AI Search YTD Running 99%	Uses per month	**March 2028**	Web page upgrade, advanced AI search, library app, & new storefront all launched	Ratio of # of successful instantiations, # of reported crashes
Digitize priority reference books/chart	No digital reference books/chart exist	10 accessible digital media items, 50 subscribers	12 accessible digital media items, 100 subscribers	# of books or charts accessible	**March 2028**	Two books, 5 wall charts, 3 standard docs added, MCTH 6th edition near completion	# digitized media items, subscribers
Develop videos of AFS recommended practices	A webinar library exists but not rec. practices	300 views, 4 videos	500 views, 6 videos	Unique views and videos	**March 2028**	Videos for MCTH being reviewed, prioritized. 8 near completion.	# of views, # of videos created
Improved library searchability	Search limited to traditional means	1000 accesses on AFS Library Advanced AI Search or search tutorial	2000+ accesses on AFS Library Advanced AI Search or search tutorial	# of accesses	**Oct. 2025**	7 video tutorials completed, My Catalog & AFS Library Advanced AI Search launched. Webinar completed.	# of accesses on AFS Library Advanced AI Search

Acknowledgements

This research is sponsored by the Defense Logistics Agency Information Operations, J68, Research & Development, Ft. Belvoir, VA and DLA Troop Support, Philadelphia, PA.

URL Links

- AFS Digital Library
- www.AFSCADS.com
- https://afslibraryaisearch.com/
- www.afsereader.com
- AFS Storefront
- Digital Clay Video
- Video Library
- AFS Onlive

Virtual Knowledge Transfer Platforms for Improved Access to Metalcasting Best Practices

DLA - POC: DLAR.DPR@dla.mil

AMC
AMERICAN METALCASTING CONSORTIUM

Problem

- Quickly and easily accessible digital resources are becoming more critical to maintain and improve quality standards for castings supplied to DoW/DLA due to a less experienced workforce

Objectives

- Develop interactive digital tools to rapidly transfer technology and best practice knowledge to metalcasting's next generation workforce

Benefits to Warfighter

- Improved access to references, education, and information for DoW/DLA and their casting providers resulting in:
  - Improved quality
  - Reduced costs
  - Lower lead times

Description of Project

This project will digitize existing non-digital data and create new digital tools for rapidly transferring metalcasting technology and best practices.

Team: American Foundry Society, ATI

AFS

ATI
ADVANCED TECHNOLOGY INTERNATIONAL

Milestones / Deliverables

- Mobile-friendly education tools
- Digital version of AFS Best Practices for Aluminum Reduced Pressure Test
- Digital version of AFS Mold and Core Test Handbook with videos
- Digital AFS handbook on Principles of Sand Control
- Enhanced AFS Library and Webinar Archive