

GOING CURBLESS

by:
Dean Moilanen

2021



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Session Description

Curbless showers are in high demand, sometimes solely for their streamlined look, other times because of ADA compliance efforts or similar aging-in-place design measures. This course will provide a brief overview of the growing demand for curbless showers, the difference between curbless and barrier-free, the installation methods in the TCNA Handbook, and a host of design and installation considerations for a successful project. Information will be shared pertaining to requirements for curbless showers in order to comply with ADA guidelines, and how to be sure to meet applicable plumbing codes and wet-area coefficient of friction for flooring. The various kits and systems for constructing curbless showers, with emphasis on their benefits, nuances, and important best practices to be aware of when designing and installing, will be briefly reviewed as well.

TCNA Handbook
Curbless Showers

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Learning Objectives

At the end of this session, participants will be able to:

1. Describe new trends in shower design and installation systems that provide an environment supporting an individual's ability to accomplish day-to-day activities without assistance or with minimal assistance.
2. Discuss current industry standards and their impact on shower systems from a safe entry to shower and exit from shower, while being able to clean to a healthy standard.
3. Explain design and barrier-free shower installation techniques to accommodate various construction obstacles, while complying with building standards and social sustainability.
4. Present new installation methodology and systems which offer site flexibility, as well as, provide for a durable, watertight installation.

TCNA Handbook
Curbless Showers

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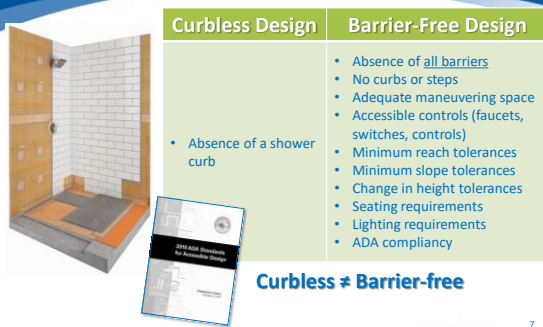
Curbless vs. Barrier-free...

- A ceramic tile/stone "curbless" shower...can be "barrier free".
- A "barrier free" shower does not have to be built from tile or stone elements.

TCNA Handbook
Curbless Showers

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Curbless vs. Barrier-free... What's different?

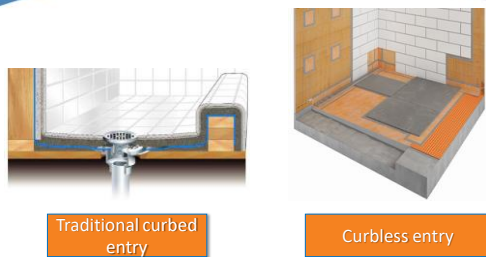


Curbless Design	Barrier-Free Design
Absence of a shower curb	- Absence of all <u>barriers</u> - No curbs or steps - Adequate maneuvering space - Accessible controls (faucets, switches, controls) - Minimum reach tolerances - Minimum slope tolerances - Change in height tolerances - Seating requirements - Lighting requirements - ADA compliance

Curbless ≠ Barrier-free

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Going Curbless...



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Going Curbless...

Why Curbless?

- Consumers are driving the trend!
 - Millennials: value "look" and lifestyle appeal
 - Boomers: value safety and function

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Going Curbless...

Why Curbless?

- Allows for a wider range of design options



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Going Curbless...

Why Curbless?

- A safer option for an aging population



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Going Curbless...

Why Curbless?



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Going Curbless...

Design Considerations:

- Center drain vs. linear drain
- Dynamic Coefficient of Friction (DCOF) concerns
- Waterproofing concerns



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Going Curbless...

Center drain vs. linear drain:

- Center drains
 - Limited tile format (i.e., mosaic only)



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Going Curbless...

Center drain vs. linear drain

- Line drains
 - Single-plane slope enables use LFT



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Going Curbless...

DCOF Concerns:

- DCOF concern of large format tile
- "Slip/fall" concerns as the tile/stone size increases



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Going Curbless...

DCOF Concerns:

- SCOF .60 = DCOF .38
- Tiles with DCOF less than .42 are suitable for dry floor areas only
- On select tiles for wet areas with DCOF rating greater than .42



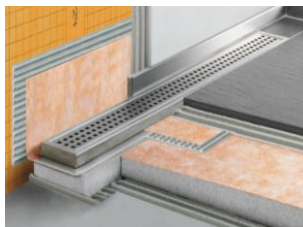
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Going Curbless...

Waterproofing Considerations:

- Method: Bonded waterproofing membrane

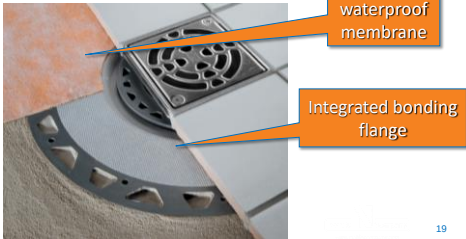


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Going Curbless...

- Method: Bonded waterproofing membrane
- Integrated bonding flange

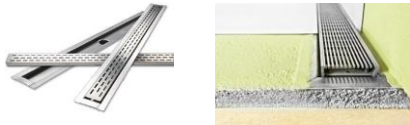


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Going Curbless...

Waterproofing Considerations:

- Method: Liquid Applied Membrane



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Going Curbless...

Waterproofing Considerations:

- Method: Fluid applied



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Going Curbless...

Waterproofing Considerations:

- Method: Clamping ring



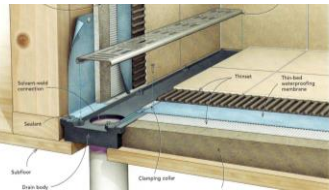
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Going Curbless...

Waterproofing Considerations:

- Method: Clamping ring
 - Provides a secure interface of CPE sheet to drain body



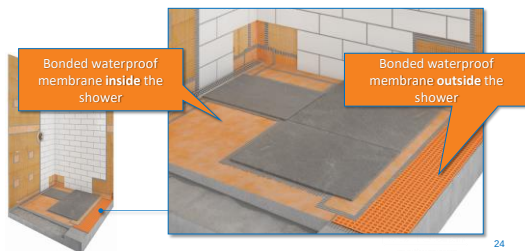
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Going Curbless..

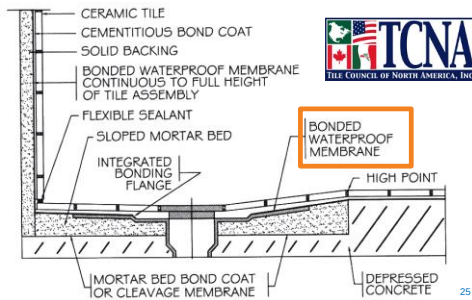
Requires continuous waterproof envelope

i.e. bonded waterproof membranes



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Curbless Detail TCNA 422C-15



Drain Placement Options



Wall placement



Center placement



Entry placement

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Going Curbless...

Design Considerations:

- Define the "wet area space"
- Curbless incorporates the entire room
- GPM is higher when using linear drains

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Going Curbless...

Design Considerations:

Waterproofing Concerns-

- The entire bathroom is now a "wet area".



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Going Curbless...

Construction Considerations:

- Drain selection & location may require **additional drains** in the drying area.



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Going Curbless...

PreFab Trays and Pans:

- EPS foam
- XPS foam
- Molded EPS foam
- Foam/hybrid offerings

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Going Curbless...

PreFab Trays and Pans:

- EPS foam



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Going Curbless...

PreFab Trays and Pans:

- Molded EPS foam



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Going Curbless...

PreFab Trays and Pans:

- XPS foam



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Going Curbless...

PreFab Trays and Pans:

- EPS foam reinforced hybrid



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Going Curbless...

Design Considerations:

- Is this a practical/functional design?



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Going Curbless...

Construction Considerations:

- Substrate, wood or concrete
- Applicable codes
- Budget concerns
- Drain location/plumbing concerns
- Additional drains in drying area

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Going Curbless...

Construction Considerations:

Wood or Concrete Substrate

- Substrate could impact drain selection and location.
- TCNA methods, B421, B421C & B422C are specific to curbless showers.



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Going Curbless...

Construction Considerations:

Additional Relevant Codes

- 2015 IBC & 2015 IPC
- ICC A117.1 & 2010 ADA
- ANSI A118.10 & A118.12
- ASME 112.18 & IAPMO PS106



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Going Curbless...

Construction Considerations:

- Budget concerns
- Drain selection influences cost (center drain vs. linear drain)
- Suitability of tile and stone in wet areas
- Drain location / plumbing concerns-rework / additional drains
- Waterproofing methods



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Going Curbless...

Design Considerations/What the Client Wants:

- Residential vs. commercial
- Form vs. function
- The value proposition of curbless
- Current trends in curbless design



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SUMMARY

- Curbless is a growing trend.
- Curbless is not the same as Barrier-free.
- Must consider drain type & placement, DCOF, waterproofing.
- Always observe industry codes and standards.



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SUMMARY

- Successful crack isolation is many times interwoven with the waterproofing specifications.
- You have to "drill down" to ANSI A118.12 "high performance" to ensure the crack isolation/WP product used will withstand the typical substrate movements inherent in every installation.
- Permeation is an overlooked component of successful waterproofing. Including ASTM E96 standards in waterproofing products used on your projects addresses that concern.



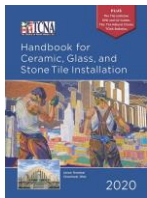
SUMMARY

- Using current, updated ANSI and ASTM standards for crack isolation and waterproofing and incorporating the CSI "nature of attributes" approach to evaluating a product's performance potential eliminates the chance of sales and marketing spin from unduly influencing your final product selection.

Why leave it to just anyone?

"Because tile is a permanent finish, the lowest bid should not be the driving factor, but rather who is the most qualified to perform the scope of the work specified."

- TCNA Handbook



The Tile Council of North America urges design professionals to include language in specifications to secure qualified contractors and installers. The following nonprofit programs are well-established and recognized by the Handbook Committee:

- Advanced Certifications for Tile Installers (ACT)
- Ceramic Tile Education Foundation (CTEF) Certified Tile Installer Program
- International Masonry Institute (IMI) Contractor College
- Journeyman Tile Layer Apprenticeship Programs
- Natural Stone Institute (NSI) Accreditation for Natural Stone Tile Installation
- National Tile Contractors Association (NTCA) Five Star Contractor Program
- Tile Contractors Association of America (TCAA) Trowel of Excellence Program



MasterSpec®

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

- Installer is [a **Five-Star member of the National Tile Contractors Association**] [or] [a **Trowel of Excellence member of the Tile Contractors' Association of America**].
- Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
- Installer employs only [Ceramic Tile Education Foundation Certified Installers] [or] [installers recognized by the U.S. Department of Labor as Journeyman Tile Layers] for Project.
- Installer employs at least one installer for Project that has completed the Advanced Certification for Tile Installers (ACT) certification for installation of [mud floors] [mud walls] [membranes] [shower receptors] [gauged porcelain tile/gauged porcelain tile panels and slabs] [and] [large format tile].





1000	QUALITY ASSURANCE
1000	Maintain one copy of and ANSI A108.01-2003 and TCNA-088 on site.
1007	Manufacturer Qualifications. Company specializing in manufacturing the types of products specified in this section, with minimum <u>five</u> years of documented experience.
1008	Installer Qualifications
1009	Company specializing in performing the installation, with minimum of <u>five</u> years of documented experience.
1010	Accredited Five-Star member of the National Tile Contractors Association (NTCA) or Tileset of Excellence member of the Tile Contractors' Association of America (TCAA).
1011	Installer Certification
1012	Ceramic Tile Education Foundation (CTEF) Certified Tile Installer (CTI)
1013	Apprenticeship Program: Installer has achieved Journeyworker status through an apprenticeship from the International Union of Bricklayers and Allied Craftworkers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
1014	Advanced Certifications for Tile Installers (ACT). Certification in the installation of membranes, mortar bed (mud) floors, mortar (mud) walls, shower receptacles, large format tile, gauged porcelain tile/pencils and grouts.
1015	International Masonry Training and Education Foundation (IMTEF) Supervisor Certification Program (SCP).



LARGE FORMAT TILE

MEMBRANES

MUD WORK

SHOWERS

GAUGED PORCELAIN TILE

GROUTS



Advanced Certifications for Tile Installers
tilecertifications.com



Ceramic Tile Education Foundation
ceramictilefoundation.org
info@ceramictilefoundation.org



National Tile Contractors Association / Five Star Contractor Group
tile-assn.com
NTCAqualifiedlabor@tile-assn.com



Tile Contractors' Association of America
tcaainc.org
info@tcaainc.org



Tile Council of North America, Inc.
TCNAtile.com/find-qualified
info@tcnatile.com

ANY QUESTIONS?

LEARNING EDUCATION

AIA

This concludes our program.

Please feel free to contact me for additional information.

Dean Moilanen

Director of Architectural Services – Noble Company,
AIA Las Vegas Allied Member, CSI, CTEF, IIBEC, NTCA Ambassador

702-604-5366
dean@noblecompany.com

THANK YOU!

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