

Designing Spray Coatings for the Real World

How Production Challenges Drive Coating Innovation

Thomas Ripplinger
Technical Director
Northern Coatings and Chemical Co.
DECO '26, Pittsburgh, PA



DEVELOPED FOR DIFFERENT MARKETS

- WINE/LIQUOR
 - WIDE RANGE OF COLORS
 - ADHESION ON DIFFERENT GLASSES
 - RECIEVE PRINTING WELL
- COSMETIC
 - DOI AND CLARITY
 - CHEMICAL RESISTANCE
 - WATER RESISTANCE
- VOTIVES/VASES/SOUVENEIRS
 - WIDE RANGE OF COLORS
 - TRANSIT ABRASION RESISTANCE
 - LOW COST
- STRUCTURAL GLASS
 - CHEMICAL/CLEANER RESISTANCE
 - UV RESISTANCE



DEVELOPED FOR DIFFERENT SPRAY EQUIPMENT

- AIR ATOMIZED OR HVLP
 - EASY TO USE ON MOST PAINTS
 - LOWER TRANSFER EFFICIENCY
- TURBOBELL OR ROTARY ATOMIZER
 - HIGHER TRANSFER EFFICIENCY
 - FINE ATOMIZATION
 - DIFFICULT TO USE
 - PLUGS WITH FAST DRYING COATINGS



DEVELOPED FOR DIFFERENT LINE CONFIGURATIONS

- INLINE
 - COMPACT
 - LESS FLEXIBLE
 - DRY SPEED NOT A BIG CONCERN
- MANUAL TRANSFER
 - FLEXIBLE CURING CYCLES
 - LIMITED TO FAST DRYING COATINGS
 - USED AT FACILITIES THAT ALSO HIGH FIRE CERAMICS



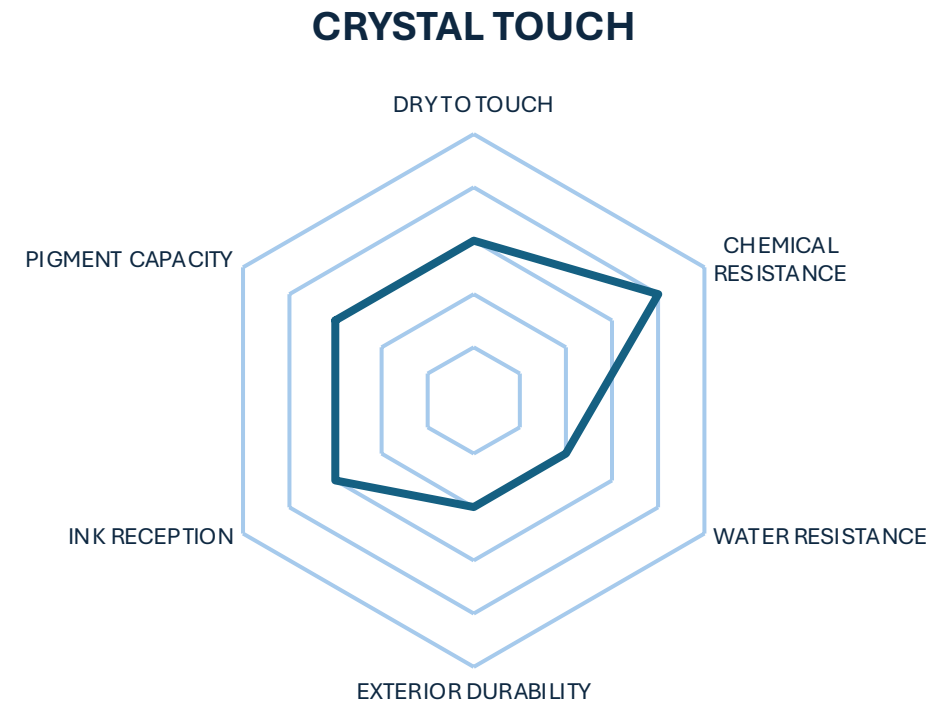
CASE STUDY #1

- LINE BUILT INITIALLY FOR UV CURING
 - WANTED W/B THERMAL USING IR LAMPS
 - FOR CANDLE JARS
- USED IR IN OUR LAB TO VERIFY CURE
 - MATCHED TIME & TEMPERATURE
 - MEETS ALL PERFORMANCE EXPECTATIONS
- PRODUCTION TRIAL
 - PARTS HAD DAMAGE
 - PAINT NEEDED HARDNESS WHEN HOT



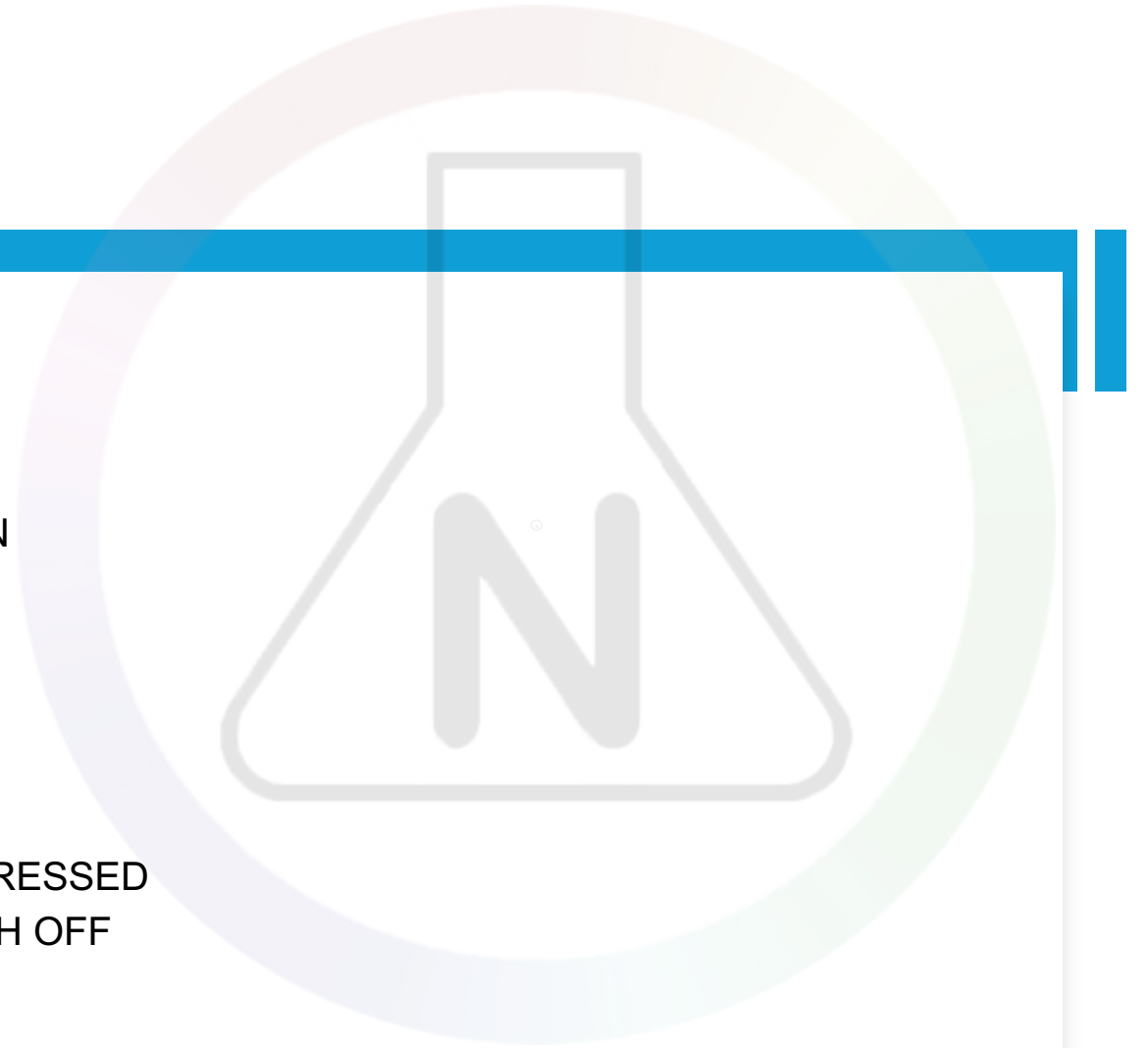
CRYSTAL TOUCH

- HYBRID RESIN SYSTEM
 - EMULSION
 - WATER REDUCIBLE
- ECONOMICAL
- TINTED TO MOST COLORS



CASE STUDY #2

- HIGH VOLUME MANUAL TRANSFER
 - PRICE SENSITIVE – LIMITED MATERIAL SELECTION
- VERY SPECIFIC LAB TESTS
 - TRANSIT ABRASION
 - DRY TO TOUCH
- PRODUCTION TRIAL
 - STARTED GREAT BUT GOT WORSE AS RUN PROGRESSED
 - SENSITIVE TO TOO MUCH TEMPERATURE IN FLASH OFF



CRYSTAL TOUCH G2

- HYBRID RESIN SYSTEM
 - EMULSION
 - WATER REDUCIBLE
- FASTER DRY TO TOUCH
- MORE ABRASION RESISTANCE



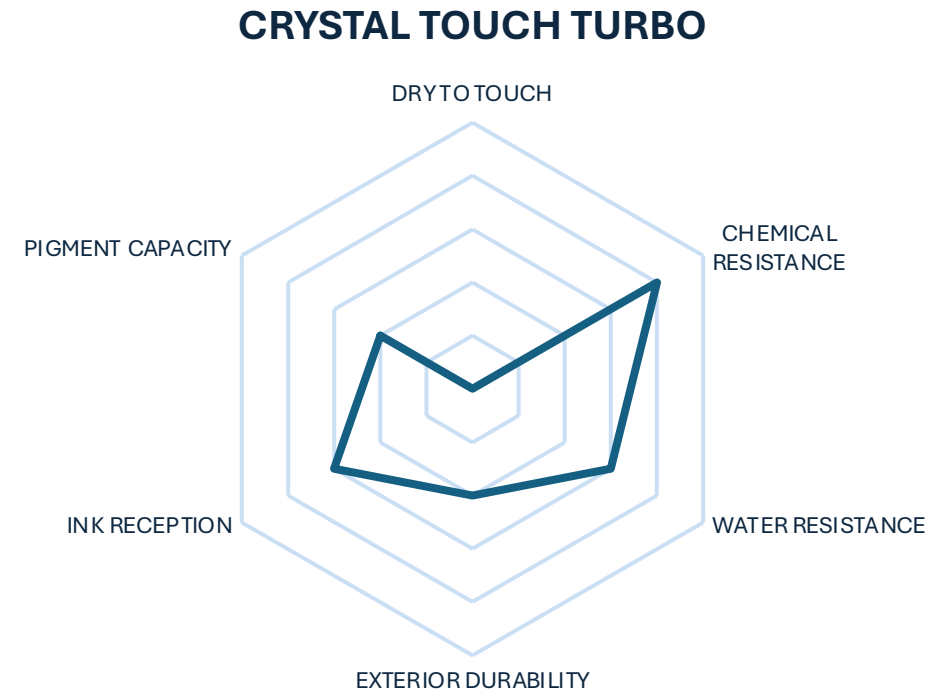
CASE STUDY #3

- LIQUOR DECORATION HAS DIFFERENT NEEDS
 - WATER/ICE IMMERSION
 - PASTERUIZATION
 - COLD END TOLERANCE – HEAVIER BOTTLES
- EXTENSIVE LAB TESTS
 - TRANSIT ABRASION
 - PRINTING
 - ADHESION– WATER, ICE, FILLING LINE
- PRODUCTION TRIAL
 - PLUGGED SPRAY EQUIPMENT



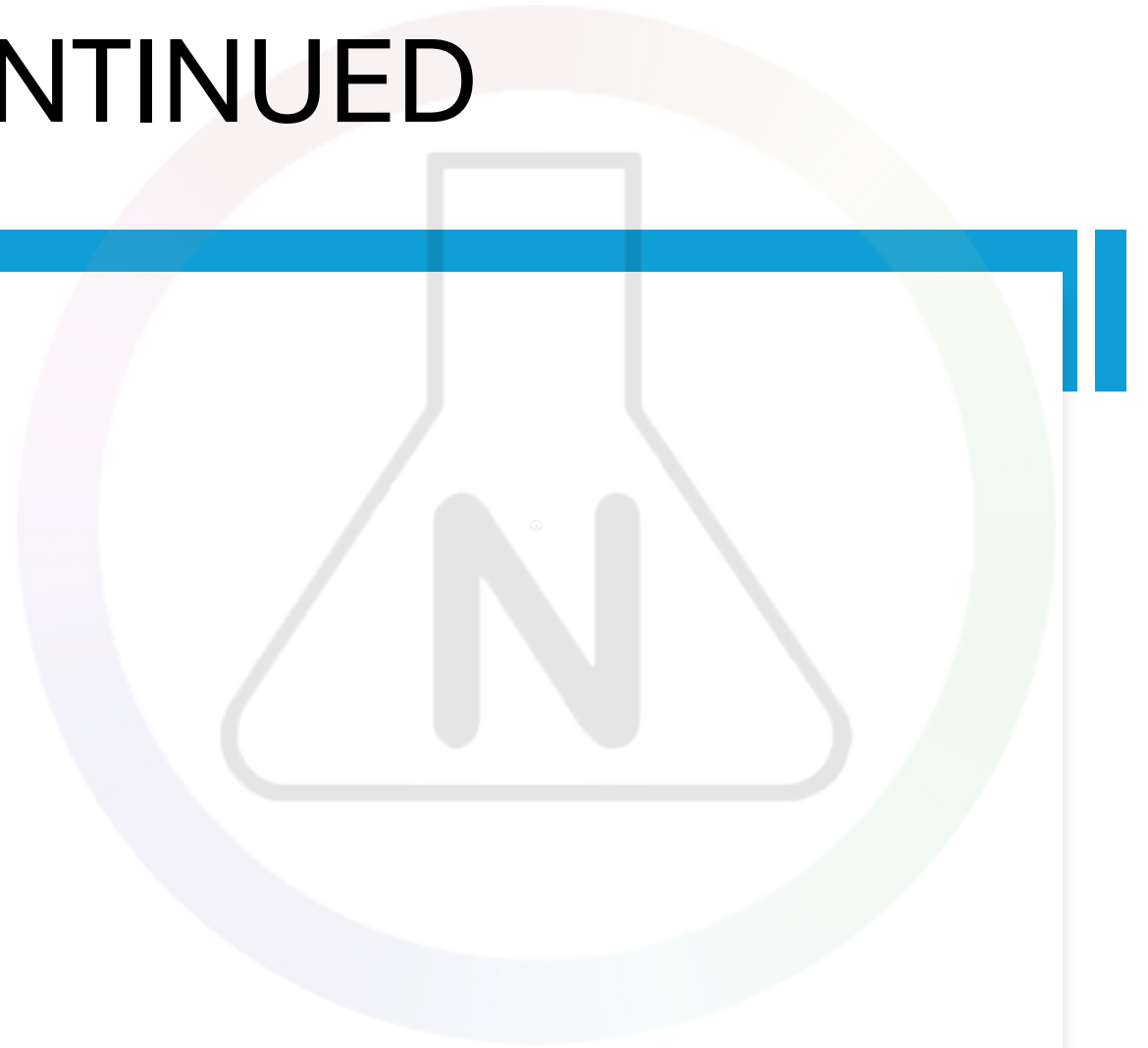
CRYSTAL TOUCH TURBO

- WATER REDUCIBLE RESIN SYSTEM
 - NO DRY TO TOUCH
 - PLUG FREE
 - EASY CLEAN UP
- GOOD WATER SOAK
- LIMITED COLOR CAPACITY
- WORKS, BUT NOT OPTIMALLY
 - NEED TO FIND A REPLACEMENT



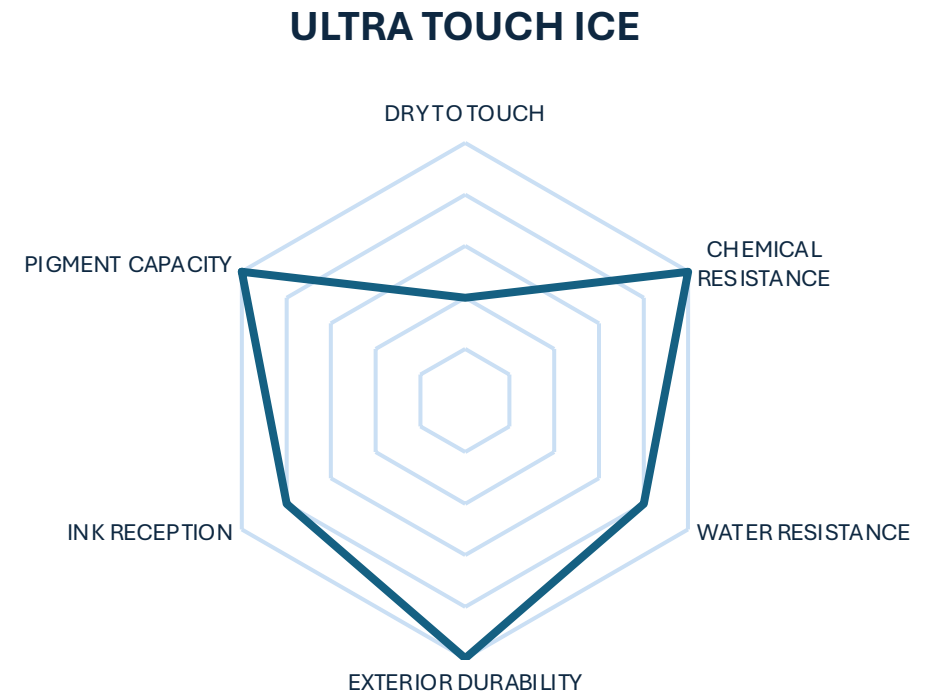
CASE STUDY #3 - CONTINUED

- RESIN PLANTS ROUTINELY FAIL
- WATERBORNE SIGN COATING
- PROMISING RESIN DISCOVERED
 - WATER REDUCIBLE
 - HARD, YET FLEXIBLE
 - EXTREME CHEMICAL RESISTANCE
 - DRIES TO TOUCH



ULTRA TOUCH ICE

- **WATER REDUCIBLE RESIN SYSTEM**
 - STILL DRIES TO TOUCH
 - PLUG FREE
 - EASY CLEAN UP
- **EXCELLENT COLOR CAPACITY**
 - ALSO SUITABLE FOR SUBLIMATION
- **EXCELLENT CHEMICAL RESISTANCE**
- **EXCELLENT DOI**
 - EXPANDED OUR SALES IN COSMETIC DECORATION

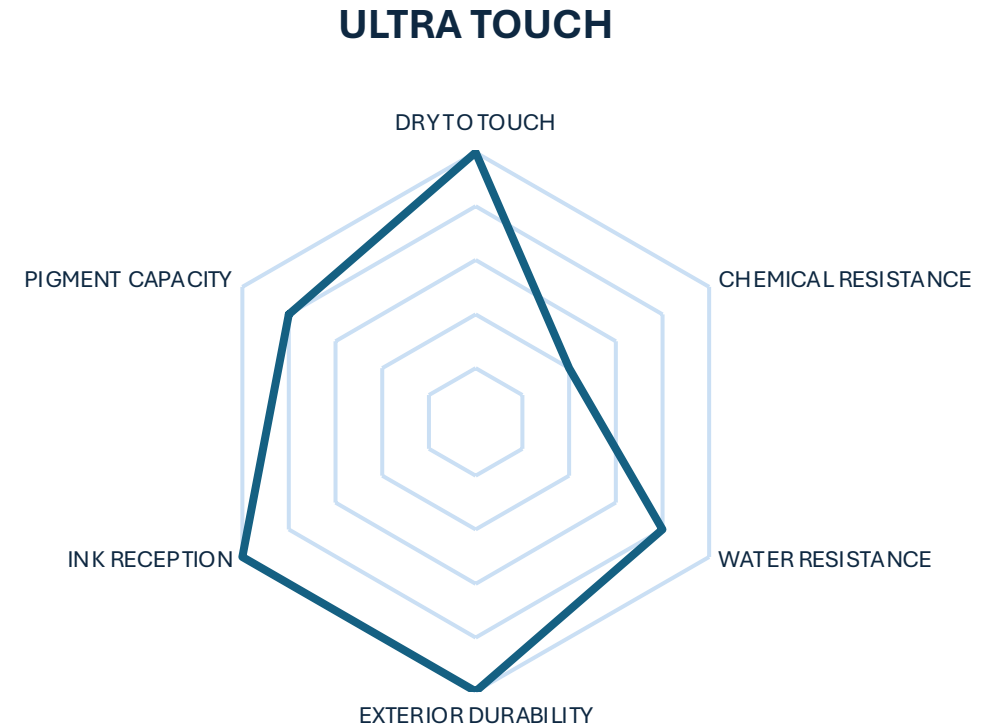


#4 – FELICES CULPAE

- INITIAL FAILURES BECAME USEFUL
- FAIL ONE PLACE AND SUCCEED IN ANOTHER
- STRONG TOOLKIT FOR SOLVING PROBLEMS
 - OFTEN INVOLVES REINVIGORATING OLD PRODUCTS WITH NEW TECHNOLOGY

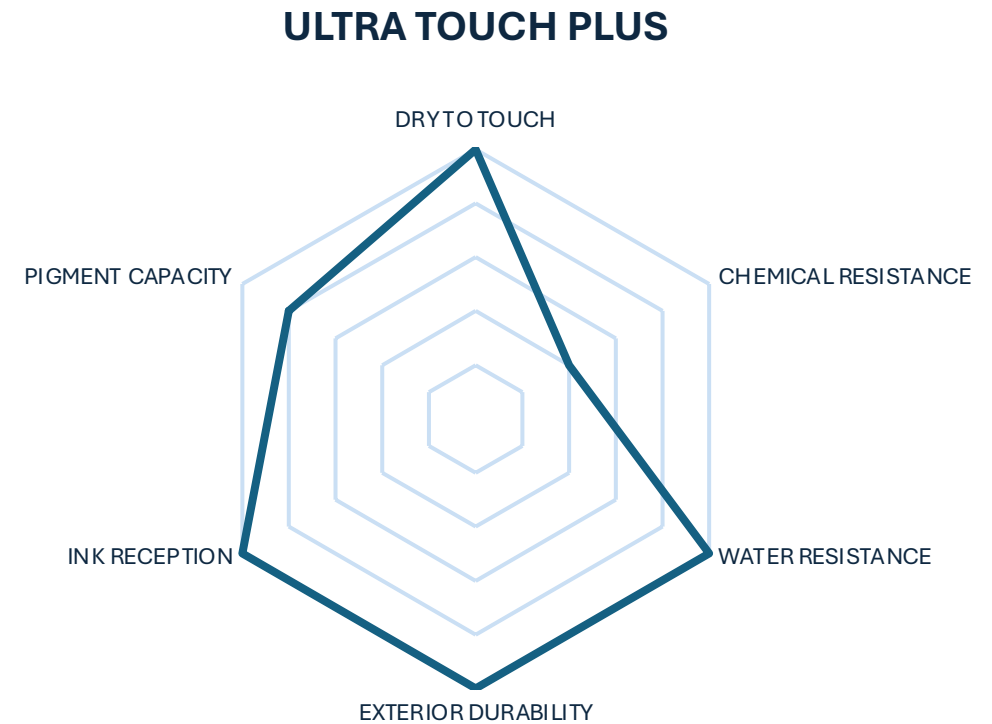
ULTRA TOUCH

- EMULSION RESIN SYSTEM
 - FAST DRY TO TOUCH
- CAN PLUG SOME SET-UPS
- GREAT DURABILITY
- WORKS THROUGH MOST COLD ENDS



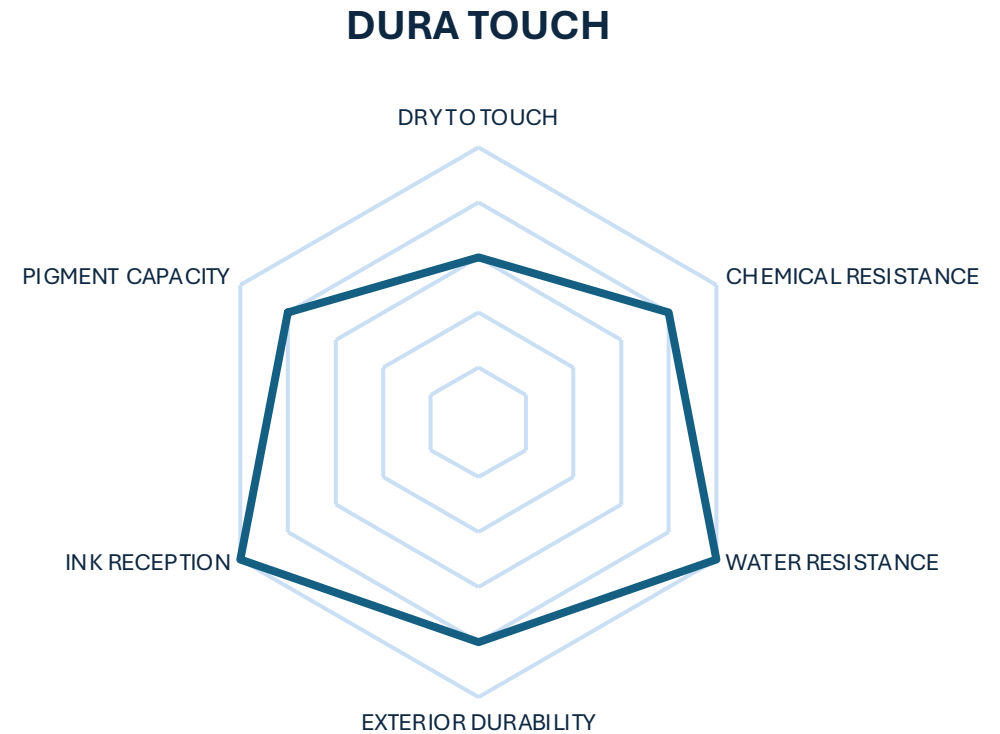
ULTRA TOUCH PLUS

- EMULSION RESIN SYSTEM
 - FAST DRY TO TOUCH
- CAN PLUG SOME SET-UPS
- MOST WATER RESISTANT COATING
 - HOT, COLD, ICE, OR STEAM
- ADHERES WHEN NOTHING ELSE DOES



DURA TOUCH

- HYBRID RESIN SYSTEM
 - LIMITS USE ON ROTARY ATOMIZERS
- SPIN-OFF OF ULTRA TOUCH ICE
- MOST DISHWASHER RESISTANT
 - 200+ RESIDENTAL CYCLES
 - COLOR DEPENDENT



CONCLUSIONS

- LAB TESTING ONLY GETS YOU IN THE DOOR
 - ONCE YOU ARE IN THE DOOR, LAB PERFORMANCE DOES NOT MATTER
- THERE WILL BE HICCUPS IN COMMERCIALIZATION
 - HOW IT IS RESPONDED TO WILL MAKE OR BREAK THE PARTNERSHIP
- REAL VALUE COMES FROM COLLABORATION BETWEEN PAINT SUPPLIER AND CUSTOMER
 - THE PAINT NEEDS COMPLIMENT THE PROCESS – CUSTOMIZATION
 - SOME OF OUR TOP ACCOUNTS, WE DID NOT HAVE A GOOD SOLUTION AT FIRST

THANK YOU!

CONTACT:

P: 906-352-5174

E: tripplinger@northern-coatings.com

