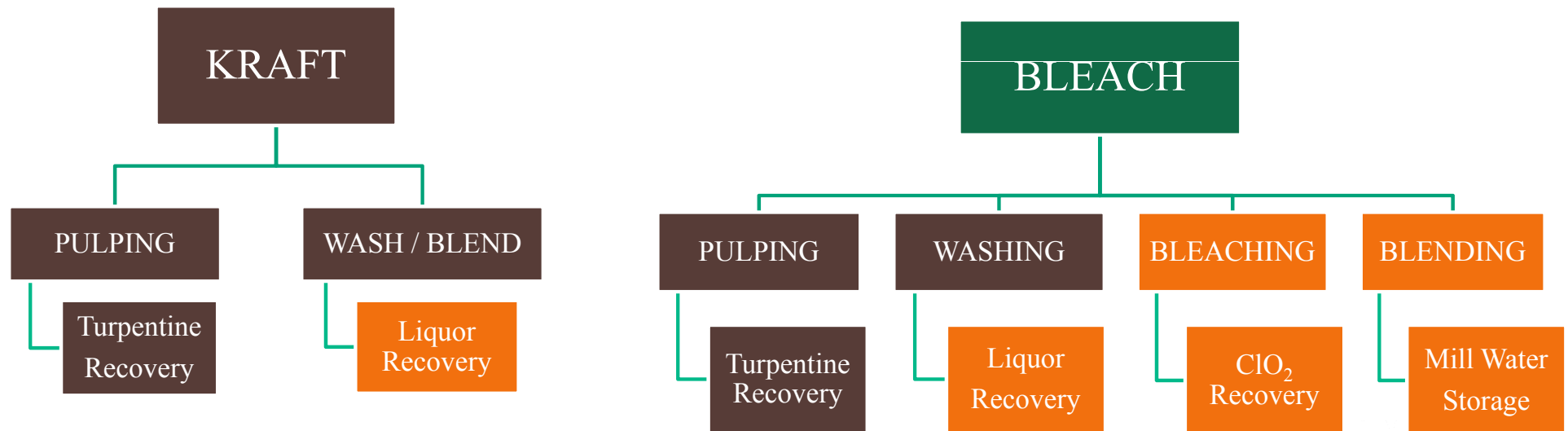


Pulp and Paper Market



PULP & PAPER PROCESSES



PULPING

• CHEMICAL PULPING

- Uses chemicals, heat & pressure to liberate fibers
- Lower cost, higher yield
- Higher processing temperatures
- Does not damage/degrade pulp providing a stronger fiber material
- Most common & efficient process

• MECHANICAL PULPING

- Uses mechanical crushing/grinding action to separate fibers
- Longer time / lower yield
- Lower temperature process
- Relies on heat / water vapor to soften the lignin for mechanical separation
- Used for products that require less strength

CHEMICAL DIGESTER

- Typically portland cement systems due to mild caustics used in digesting process.
- Where Digesters are deteriorated or aging, KNIGHT-GARD linings can extend asset life, saving Customer high replacement cost and reduce downtime.
- VINYL-ESTER RESIN SYSTEMS
 - VINGARD HMW



TURPENTINE RECOVERY

- Tall Oil Tanks
 - Depending on purity and process can be corrosive
- Turpentine Storage Tanks
 - Typically non-corrosive to Carbon steel
 - Exception where sulfur is present
- Tall Oil Tanks
 - VINGARD™ Flake Filled Trowel
 - VINGARD™ Flake Filled Sprayable
 - EPOXIGARD™ H Flake Filled Trowel
- Turpentine Storage Tanks
 - VINGARD™ Flake Filled Sprayable



PULP WASHING / CHEMICAL EXTRACTION

- Black Liquor Storage
 - VINGARD™ G coating (Graphite-filled)
- Smelt Extraction Tank
- Green Liquor Clarifier
- Slaker
- Causticizing Tanks
- White Liquor Clarifier
 - VINGARD™ Flake Filled Sprayable
 - VINGARD™ AR (Abrasion Resistant)
 - VINGARD™ HT (High Temperature)



ClO₂ BLEACH TOWERS

- Best System
 - VINGARD™ Primer
 - VINGARD™ Flake Filled (Sprayable)
 - PUREGARD™ Urethane Membrane
 - RESIBOND® D acid resistant mortar w/ KNIGHT-GARD™ tile
- Good System
 - PUREGARD™ Urethane Membrane
 - RESIBOND® D acid resistant mortar w/ KNIGHT-GARD™ tile



MIXING / STOCK CHESTS

- Best System
 - VINGARD™ Primer
 - VINGARD™ Flake Filled (Sprayable)
 - PUREGARD™ Urethane Membrane
 - RESIBOND® D acid resistant mortar w/ KNIGHT-GARD™ tile
- Good System
 - PUREGARD™ Urethane Membrane
 - RESIBOND® D acid resistant mortar w/ KNIGHT-GARD™ tile



SECONDARY CONTAINEMENT & WASTE TREATMENT

- Secondary Containment
 - EPOXIGARD™ SL
 - EPOXIGARD™ HSL
 - VINGARD™ SL
- Waste Treatment
 - EPOXIGARD™ FSL



MISCELLANEOUS AREAS

- Pits/Floors under wire presses
- Flooring under processing equipment
- Tile/brick lined vessels
- Chemical Storage/Distribution
- Composite Strengthening of aging tile vessels in poor condition.

