NCCM® Mill Rolls are the premium choice for automotive, primary metal, sheet and coil operations.

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NCCM® Neutral Mill Roll Technology
General purpose for primary metal and AOEM stamping operations

NCCM® Neutral Mill Roll material is considered the premium general-purpose roll covering for primary metal and AOEM stamping operations. NCCM is the only mill roll manufacturer authorized to use 3M material. World-renowned quality and performance is what makes our Neutral Mill Roll, made with 3M material, outperform all others.

The neutral roll is used in pH neutral environments and oil applications. NCCM Mill Rolls are made in a variety of densities and to your specification and roll processing needs.

Outstanding Characteristics:
- Long life
- Cut resistant
- Improve fluid control
- High coefficient of friction
- Self-healing

Significant Productivity Contributions are:
- More uptime
- Increase line speed and productivity
- Reduce chemical cost
- Improve process quality and control
- Maintain integrity of process fluid
- Reduce maintenance cost
- Fewer defects on coil surface
- Lower energy cost

NCCM® has developed patented software for designing shafts and rolls to engineer a synergistic solution to optimize the final product.

Our Mill Roll Structural Analysis Tool (MR SAT) takes any roll/shaft design to the next level by processing it through a finite element analysis program that displays the important stresses, deflections and deformations encountered during operation. Analysis of the results leads to optimization of the roll, shaft or process.

Cost Savings Advantages:
- Provide Highly Engineered Film Thickness
  - Maintain film thickness longer over life of the roll
  - Reduce hydrostatic stamping defects
  - Reduce part rework
  - Reduce paint rework
- Drastically Reduce Oil Usage
  - Reduce welding smoke
  - Save oil costs
  - Better part transfer
  - Reduce excess oil in production line
- Longer Life
  - Best total value roll system
  - More damage resistant
  - More consistent performance
- Global Network and Process Solutions Experts

For more information visit our website @ www.NCCMCO.com
NCCM® Mill Roll Technology
Premium choice for steel and automotive industries

NCCM® Premium Performance:
- Neutral
- CX-Series
- RK

NCCM® Mill Roll premium roll covering products optimize countless metal sheet processing applications in primary metals and ADEM (automotive original equipment manufacturer) stamping plants. They also show exceptional value in other industries such as lithography.

NCCM® Mill Roll technology is designed to replace traditional roll coverings such as rubber, urethane, non-wovens and various fabrics. NCCM® Mill Roll technology has features and properties that no other non-woven rolls offer.

NCCM® Mill Roll Technology - Advantages
- Long Life - Compressible; resist cutting for more uptime
- Line Speed - Porous, open surface for consistent strip contact allowing higher line speeds
- Repairable for better return on investment
- Self-healing for superior fluid control
- High coefficient of friction on many surfaces, even wet, for better strip control

Rubber Rollers
- Short life - Non-compressible; susceptible to cuts, causes more downtime
- Can limit line speed due to hydroplaning because of non-porous, closed surfaces
- Non-repairable
- Cuts propagate causing excessive fluid pass-through and reduced lie
- Low coefficient of friction on wet/oiled surface conditions

NCCM® CX and CX-Plus Series Mill Roll Technology
For aggressive chemical environments

High Technology Offers Key Advantages Over Conventional Rolls
RK rolls are used in place of rubber, steel, urethane and felt rolls on continuous coil lines and sheet processing lines. In tension/bride and support applications, in test after test, RK rolls consistently last longer and perform better than conventional rolls.

Higher Coefficient of Friction
RK rolls can generate tension levels from 1.5 to 45 times the tension levels achieved with rubber rolls. Higher tension means tighter coils, minimized sag, improved line control, straighter edge registry and reduced droop and movement in annealing furnaces. Overall, there is less slipping and, therefore, fewer defects on the strip surface.

Recommended Applications:
- Wringer rolls in acidic and caustic environments
- Hold-down rolls
- Deflector rolls
- Steering rolls
- Pickle/feed rolls
- Submerged rolls

Recommended Production Lines:
- Electropolishing lines
- Pickling lines
- Color-coating lines
- Caustic washers

A variety of rolls are available. Contact your NCCM® Mill Roll Technical Specialist or authorized NCCM® Mill Roll distributor.

For more information visit our website @ www.NCCMCO.com
NCCM® Mill Rolls
Proven effective in a wide variety of applications

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<tr>
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<td>Caustic (10-14 pH)</td>
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An NCCM® core value is to reduce our global environmental footprint through lean and green technologies resulting in cost savings to our customers.

Mill rolls made with NCCM® Mill Roll technology are the lean, green choice because they:
- Dramatically reduce chemical, oil and water usage
- Extend roll life: One NCCM® Mill Roll can last longer than up to 100 rubber rolls
- Reduce transportation of rolls
- Reduce electricity usage due to non-motor driven rolls
- Reduce energy used to dry strip
- Increase operational efficiency through less downtime and higher line speeds
- Reduce spare roll storage space