

MudSystemPhysics

Detailed parameter reference.

BMP documentation version • extended parameter table

How to read the tables:

“What it does” — the meaning of the parameter for gameplay, physics, or interface.

“If increased / enabled” — what usually happens when the value increases or the flag is enabled.

“If decreased / disabled” — the opposite effect.

For bool parameters, treat “up/down” as “ON/OFF”.

HUD

XML parameter	Setting name (RU)	What it does	If increased / enabled	If decreased / disabled
hud_iconPreset	HUD icon preset	Selects the icon set for the mini-HUD for wetness/precipitation.	Changes the visual style; does not affect physics.	Returns to the default or more readable icons for a specific UI.
hud_showNextPrecipTimer	Show time until precipitation	Shows a timer until the next precipitation event next to the precipitation icon.	ON = more information, OFF = a cleaner HUD.	Keep ON for testing and weather balancing.
hud_offsetXPx	HUD offset X (px)	Horizontal HUD offset.	A large positive/negative value moves the block across the screen.	Adjust together with Y and the position presets.
hud_offsetYPx	HUD offset Y (px)	Vertical HUD offset.	The farther from 0, the higher/lower the block moves.	Useful for compatibility with other HUD mods.
hud_moveStep	HUD movement step	The step used to change the X/Y offsets in the menu.	A larger step = faster HUD repositioning, but less precise.	Use 1 or 5 px for fine adjustment.
hud_resetPos	Reset HUD position	Resets the HUD position to default once.	This is not a persistent setting: after activation it immediately returns to OFF.	Used as an action button.
hud_posPreset	HUD position preset	Applies a predefined HUD position preset.	Changes offsetX/offsetY to preset coordinates.	The best way to quickly fix overlap with another interface.

MudPhysics

XML parameter	Setting name (RU)	What it does	If increased / enabled	If decreased / disabled
mp_enabled	Mud on terrain brushes:	Main switch for the mud system on terrain	OFF completely disables the	Disable only for diagnosing

XML parameter	Setting name (RU)	What it does	If increased / enabled	If decreased / disabled
	enabled	brushes.	MudPhysics branch.	conflicts or FPS drops.
mp_useDIRTBrushes	Use DIRT terrain brushes	Whether terrain layers named DIRT should be treated as muddy.	ON expands the mod's coverage to maps where authors use DIRT.	If the map is too muddy almost everywhere, try OFF.
mp_freezeMudByTempEnable	Mud freezing by temperature	Enables winter mud behavior logic at sub-zero temperatures.	ON activates temperature-based behavior.	Needed for realistic seasonal behavior changes.
mp_freezeAllLayersInWinterEnable	Winter mud freeze (all layers off)	A hard winter freeze for all muddy layers.	ON more strongly disables reaction to wetness in winter.	Useful for icy/snowy maps, but may make winter feel too dry.
mp_freezeAllLayersTempC	Freeze temperature (°C)	The temperature threshold below which the winter freeze activates.	Closer to 0 = freezing triggers more often; lower = less often.	Raise to 0...-1 for earlier freezing, lower to -4...-6 for a milder winter.
mp_extraWheelSinkEnable	Extra wheel sinking	Additional wheel sinking in mud.	ON enhances the feeling of viscosity and depth.	Disable if the vehicle already has wheel geometry issues.
mp_winterSlipEnable	Winter slip (by temperature)	Enables a separate winter traction multiplier.	ON enables winter slipping mode at the temperature threshold.	Works well together with winterSlipTempC and winterSlipMul.
mp_winterSlipTempC	Winter slip threshold (°C)	The temperature below which winter slipping is applied.	Closer to 0 = winter mode activates more often.	If you want icy roads already at slight sub-zero temperatures, increase it.
mp_winterSlipMul	Slip multiplier (winter)	Traction multiplier in winter mode.	Lower = more slippery; higher = more grip.	This is one of the key parameters for the feel of winter.
mp_normalSlipEnable	Normal slip	Enables the base slipping mode outside of rain and winter.	OFF makes behavior drier and more stable.	Usually left ON for cohesive physics.
mp_normalSlipMul	Slip multiplier (normal)	Base traction multiplier under normal conditions.	Lower = more wheelspin and drift; higher = more stable traction.	Finely adjusts the overall difficulty level even in dry weather.
mp_rainSlipEnable	Rain slip	Enables slipping during rain and high wetness.	ON adds reduced traction in wet weather.	One of the most noticeable weather-related switches.
mp_rainSlipWetnessMin	Rain slip: min wetness	The minimum wetness at which rain slipping activates.	Lower threshold = the effect starts earlier; higher = only on a genuinely wet map.	Raise it if rain makes the map too slippery too quickly.
mp_rainSlipMul	Rain slip: multiplier	Traction multiplier during moderate wetness/rain.	Lower = more slippery in moderate rain; higher = milder effect.	Base rain multiplier.
mp_rainSlipMaxMul	Rain slip: max multiplier	Minimum traction multiplier during heavy rain.	Lower = extremely slippery at peak wetness.	Should not be higher than rainSlipMul, otherwise the effect curve becomes illogical.
mp_permaStuckEnable	Permanent stuck state	Allows the mechanic of irrecoverable getting stuck in heavy mud.	ON makes it not always possible to get out of deep mud.	For an arcade setup, OFF is better.
mp_permaStuckChanceOnStruggle	Chance of permanent stuck while struggling (%)	Chance to get fully stuck while struggling in wheelspin.	Higher = the vehicle gets "hopelessly stuck" more often.	A very sensitive parameter; change in small steps.
mp_motorLoadEnable	Engine load	Engine load caused by viscous soil/mud.	ON causes stronger loss of traction and speed under load.	Makes heavy machinery feel more meaningful.
mp_particlesEnable	Particles (basic)	Enables basic mud particles at the wheels.	ON mainly affects visuals and atmosphere.	Can be turned off for FPS.
mp_extraParticlesEnable	Particles (extra)	Enables an additional particle layer.	ON makes mud richer visually, but may cost performance.	On weaker PCs it is better to test separately.
mp_mudVarStrength	Mud variation: strength	Strength of mud variability across areas.	Higher = the surface is more patchy and unpredictable; lower = the mud is more uniform.	Increase for a more lively surface, decrease for more predictable behavior.
mp_mudVarCell	Mud variation: patch size	Size of the mud variation patches in	Higher = larger patches; lower	A value that is too small can

XML parameter	Setting name (RU)	What it does	If increased / enabled	If decreased / disabled
	(m)	meters.	= frequent small changes in behavior.	make driving feel "twitchy".
mp_mudBobAmp	Depth oscillation: amplitude	Amplitude of depth/sinking oscillations.	Higher = the mud more strongly "grabs and releases."	Adds liveliness, but looks jerky if overdone.
mp_extraParticleOnlyWetMud	Extra particles: only in wet mud	Show extra particles only in genuinely wet mud.	ON removes unnecessary effects on an almost dry surface.	Useful for realism and FPS.
mp_extraParticleOffsetY	Extra particles: Y offset	Vertical offset of the additional particle layer.	Higher = particles rise; lower = they move closer to the ground.	Adjusted to fit different wheel models and emit nodes.
mp_dirtEnable	Dirt on vehicle	Enables mud accumulation on the vehicle.	OFF disables dirt buildup, leaving only physics.	Often disabled for clean showcase builds/screenshots.
mp_dirtMinEffMud	Dirt: min mud effectiveness	The minimum "mud effectiveness" at which it starts to stick noticeably.	Lower = it gets dirty even in light mud; higher = only in heavy mud.	If the vehicle gets dirty too quickly almost everywhere, increase it.
mp_dirtWetnessMin	Dirt: min wetness	Minimum wetness for mud to stick.	Lower = it sticks even on nearly dry soil; higher = only on wet soil.	A good filter against excessive mud after light rain.
mp_dirtBodyPerSec	Body dirt per sec.	Speed of body dirt accumulation per second.	Higher = the body gets dirty quickly.	Change in small steps, otherwise the effect shifts too sharply.
mp_dirtWheelPerSec	Wheel dirt per sec.	Speed of wheel dirt accumulation per second.	Higher = the wheels get caked in mud almost instantly.	Usually set higher than bodyPerSec.
mp_wheelBrakeEnable	Viscous wheel braking	Viscous braking / resistance to wheel rotation.	ON adds the feeling that the mud "holds" the vehicle.	The main physical amplifier of heavy mud.
mp_sinkInSpeed	Sink speed	The speed at which the wheel sinks into the mud.	Higher = sinks faster.	High values make the response abrupt; low values make it viscous and smooth.
mp_sinkOutSpeed	Recovery speed	Recovery speed of the wheel radius after leaving the mud.	Higher = recovers faster.	If the vehicle "floats" too long after mud, increase it.
mp_radiusMinFactor	Min. wheel radius	Minimum wheel radius coefficient in mud.	Lower = the wheel can sink deeper; higher = less sinking.	One of the main parameters of sinking depth.
mp_emitMultWetMud	Particles: emission	Amount of base particles on wet mud.	Higher = more splashes/emission.	If overdone, it hits FPS quickly.
mp_sizeMultWetMud	Particles: size	Size of base particles on wet mud.	Higher = larger splashes and clumps.	Too much makes the effect look cartoonish.
mp_speedMultWetMud	Particles: speed	Launch speed of base particles.	Higher = splashes scatter more aggressively.	Adjusts well for heavy machinery and high speeds.
mp_wheelBrakeBase	Braking: base	Base viscous resistance to the wheel.	Higher = harder to roll even without deep sinking.	This is the foundation of the resistance curve.
mp_wheelBrakeFromSink	Braking: from sinking	Additional resistance from sinking depth.	Higher = deep mud brakes much more sharply.	A key parameter for swamp/rut conditions.
mp_wheelBrakeFromSlip	Braking: from slipping	Additional resistance from wheelspin.	Higher = during wheelspin the vehicle digs itself in more strongly.	Useful for "don't floor the throttle" gameplay.

FieldGround

XML parameter	Setting name (RU)	Setting name (EN)	If increased / enabled	If decreased / disabled
fg_enabled	Enabled	Enabled	OFF leaves only brush mud, if it is enabled.	Use to isolate problems specifically on field ground.
fg_freezeAllLayersInWinterEnable	Winter mud freeze (fields)	Winter mud freeze	ON disables field mud reaction	Needed for maps with strong

XML parameter	Setting name (RU)	Setting name (EN)	If increased / enabled	If decreased / disabled
		(fields)	to wetness in freezing temperatures.	seasonality.
fg_freezeAllLayersTempC	Freeze threshold (°C) (fields)	Freeze threshold (°C) (fields)	Closer to 0 = fields freeze more often.	Set slightly lower than the brush threshold if you want a smoother transition.
fg_motorLoadEnable	Engine load	Engine load	ON causes traction loss in heavy field conditions.	Especially noticeable on plowed and wet ground.
fg_wheelBrakeEnable	Viscous braking	Viscous braking	ON enhances the feeling of soft/loose soil.	One of the main levers for field heaviness.
fg_radiusSinkEnable	Fields: wheel radius reduction	Fields: wheel radius reduction	OFF removes the visual-physical "sinking" effect.	Useful to disable on problematic models/maps.
fg_radiusMinFactor	Min. wheel radius	Min wheel radius	Lower = deeper sinking.	Set lower for plowing and wet cultivation, higher for grass and cut areas.
fg_radiusSinkInSpeed	Fields: sinking speed	Fields: sinking speed	Higher = the wheel sinks down faster.	Raise it for soft soil; keep it moderate for smoother simulation.
fg_radiusSinkOutSpeed	Fields: recovery speed	Fields: recovery speed	Higher = the normal radius returns faster.	Setting it too high removes the feeling of viscosity.
fg_slipMinMul	Fields: traction min. multiplier	Fields: traction min. multiplier	Lower = stronger possible wheelspin.	Acts as the lower bound of the worst-case scenario.
fg_slipMaxMul	Fields: traction max. multiplier	Fields: traction max. multiplier	Higher = more stable behavior on lighter profiles.	The difference between min and max determines the behavior range.
fg_extraParticlesEnable	Extra particles	Extra particles	ON adds visual richness.	For weak PCs, OFF is possible.
fg_eraseFruitEnable	Crop removal under wheels (to zero)	Crop removal under wheels (to zero)	ON makes muddy driving more destructive to the field.	Strong and noticeable impact on realism.
fg_eraseFoliageOnlyFields	Foliage removal: only on fields	Foliage removal: only on fields	ON is safer for decorative areas.	ON is recommended if the map contains a lot of decorative foliage.
fg_dirtEnable	Dirt on vehicle	Dirt on vehicle	OFF leaves physics but without dirt buildup.	Suitable for clean technical builds.
fg_dirtMinEffMud	Fields: dirt accumulation — min. mud	Fields: dirt accumulation - min. mud	Lower = gets dirty more often.	Helps filter out light states such as almost dry stubble.
fg_dirtWetnessMin	Fields: dirt accumulation — min. wetness	Fields: dirt accumulation - min. wetness	Lower = the vehicle gets dirty almost always.	Raise it if the field makes things dirty too quickly after slight wetness.
fg_dirtBodyPerSec	Fields: body dirt per second	Fields: body dirt per second	Higher = the body gets dirty faster.	Usually kept slightly lower than brush mud.
fg_dirtWheelPerSec	Fields: wheel dirt per second	Fields: wheel dirt per second	Higher = the wheels get dirty faster.	Pairs well with high profile sinkMul values.
fg_wheelBrakeBase	Braking: base	Braking: base	Higher = the field always rolls heavier.	The foundational viscosity of the field branch.
fg_wheelBrakeFromSink	Braking: from sinking	Braking: from sinking	Higher = deep sinking brakes more strongly.	Key parameter for plowing, wet fields, and ruts.
fg_wheelBrakeFromSlip	Braking: from slipping	Braking: from slipping	Higher = wheelspin suppresses movement more strongly.	Creates a penalty for excessive throttle.

Hidden FieldGround profiles (fgp01–fgp15)

They are hidden in the menu while showFieldGroundProfiles = false, but they are still read from XML and continue to affect physics. Below is how they are named in localization and which general coefficients of each profile can be adjusted manually in XML. (You can open them by enabling them in the game settings and re-entering the game.)

Profile	Setting name (RU)
fgp01	Profile 01: StubbleTillage (stubble)
fgp02	Profile 02: Cultivated
fgp03	Profile 03: Seedbed
fgp04	Profile 04: Plowed
fgp05	Profile 05: RolledSeedbed (rolling)
fgp06	Profile 06: Ridge (ridges / beds)
fgp07	Profile 07: Sown
fgp08	Profile 08: DirectSown (direct sowing)
fgp09	Profile 09: Planted
fgp10	Profile 10: RidgeSown (sowing on ridges)
fgp11	Profile 11: Rollerlines (roller tracks / ruts)
fgp12	Profile 12: HarvestReady (ready for harvest)
fgp13	Profile 13: HarvestReadyO (ready for harvest alt. var.)
fgp14	Profile 14: Grass
fgp15	Profile 15: GrassCut (cut grass)

XML suffix	Setting name (RU)	What it does	If increased / enabled	If decreased / disabled
fgp_mud	mud (base mud / viscosity)	Base mud/viscosity of the profile. This is the starting "heaviness" of the layer.	Higher = the layer itself is muddier, heavier, and more readily pulls into viscosity.	Lower = the profile feels drier and lighter.
fgp_wetMul	wetMul (wetness influence)	How strongly wetness amplifies the behavior of this profile.	Higher = rain/dampness impair passability more strongly.	Lower = the profile reacts less to wetness.
fgp_sinkMul	sinkMul (wheel sinking)	Multiplier of wheel sinking and subsidence specifically for this layer.	Higher = the vehicle sinks more on this profile.	Lower = the layer becomes more load-bearing.
fgp_brakeMul	brakeMul (braking)	Multiplier of the layer's braking/viscous effect.	Higher = the wheels lose roll more strongly and move with greater difficulty.	Lower = less resistance to movement.
fgp_motorMul	motorMul (engine traction)	Multiplier of engine load / transmitted traction.	Higher = the layer loads the vehicle more and "chokes" acceleration.	Lower = the vehicle pulls this type of soil more easily.
fgp_radiusMinFactor	radiusMinFactor (minimum wheel radius)	Minimum allowable wheel radius coefficient for this profile.	Higher = the wheel sinks less.	Lower = it goes deeper into the soil visually and physically.
fgp_dirtMul	dirtMul (dirt accumulation)	Vehicle dirt accumulation multiplier for this layer.	Higher = this profile gets the vehicle dirty faster.	Lower = the layer is less "dirty" visually.
fgp_slip	slip (slipping)	Traction/wheelspin coefficient for this layer.	Higher = traction degrades more gently, with less extreme wheelspin.	Lower = more slipping and a greater risk of digging in.
fgp_fxExtra	fxExtra (extra effects)	Whether to allow an additional layer of effects for the profile.	ON = more particles/visuals on this layer.	OFF = the profile is quieter and lighter on performance.
fgp_permaStuck	permaStuck (permanent stuck)	Whether permanent stuck behavior is allowed on this profile.	ON = on this type of surface you can get completely stuck.	OFF = the layer remains heavy, but is less punishing.

Practical setup tips

- If you want more hardcore mud: first reduce the slip multipliers, then raise sink/brake, and only after that touch permaStuck.
- If the mud feels “sticky but not scary”: raise wheelBrakeFromSink and wheelBrakeFromSlip, not just base.
- If the vehicle gets dirty too quickly: first raise dirtWetnessMin and dirtMinEffMud, and only then reduce dirtBodyPerSec / dirtWheelPerSec.
- If FPS drops: first disable extraParticles, then basic particles, then extra FX on individual ground profiles.
- If winter feels like ordinary dampness: raise winterSlipTempC closer to 0 and/or reduce winterSlipMul.
- If the field damages crops too much: disable fg_eraseFruitEnable or enable fg_eraseFoliageOnlyFields.